

## ORIGINAL ARTICLE

# Economic Analysis of the Legal Framework for Non-Conventional Instruments by the European Central Bank

## Análisis económico del derecho de las medidas no convencionales del Banco Central Europeo

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### Abstract

This study delves into the significance and effectiveness of unconventional monetary policy measures adopted by central banks within the current economic policy framework. These measures are employed when conventional tools prove inefficient in stimulating or stabilizing the economy, influencing interest rates, inflation, and economic activity. The hypothesis will be tested through quantitative analysis, encompassing macroeconomic data and time series analysis, and examining various economic schools and theories. Additionally, potential long-term problems associated with these measures will be explored. The expected conclusions of this analysis aim to demonstrate that unconventional measures implemented by central banks have the potential to significantly impact the economy, particularly during economic crises. It is anticipated that “Quantitative Easing” will provide increased liquidity to the financial system and lower long-term interest rates. Furthermore, the study will assess potential side effects, such as income inequality, financial risks, price distortions, or the formation of asset bubbles. This research underscores the critical importance of unconventional monetary policies in contemporary economic discourse while scrutinizing their long-term implications.

**Keywords:** policy monetary, European Central Bank, Official Interest Rates, inflation, QE.

### Resumen

Las medidas no convencionales adoptadas por los bancos centrales resultan de gran relevancia en el marco de la política económica actual. Estas se emplean cuando las medidas convencionales denotan ineficacia a la hora de estimular o estabilizar la economía e influyen sobre las tasas de interés, la inflación y la actividad económica. Esta hipótesis se probará a través del análisis cuantitativo (datos macroeconómicos, análisis de series temporales, etc.) y a través del análisis teórico mediante diferentes escuelas y teorías económicas; asimismo, se analizarán sus posibles problemas a largo plazo. Se espera que las conclusiones alcanzadas demuestren que las medidas no convencionales implementadas por los bancos centrales tienen el potencial de influir en la economía, en especial en épocas de crisis económica. Se anticipa que la “quantitative easing” dota de una mayor liquidez al sistema financiero y reduce las tasas de interés a largo plazo. A su vez, se valoran los posibles efectos secundarios, como los riesgos financieros, distorsiones de precios o formación de burbujas de activos.

**Palabras clave:** política monetaria, Banco Central Europeo, tipos de interés oficiales, inflación, QE.

## 1. Introduction

To what extent have the conventional and non-conventional measures of the European Central Bank succeeded in maintaining economic and financial stability in the Eurozone, particularly during crisis periods such as the Great Recession of 2008 or the recent COVID-19 pandemic? (Huerta de Soto et al., 2021; Alonso et al., 2023a-b; Sánchez-Bayón and Castro-Oliva, 2022). The subject is contextualized by clarifying that the European Central Bank (ECB) is part of the European System of Central Banks (ESCB) along with the other national central banks of the European Union, such as the Bank of Spain, the Bank of Italy, or the Bank of France, among others (Rakić, 2023). Each national central bank operates within its own country and works in coordination with the European Central Bank to take responsibility for Monetary Policy in the Eurozone, ensuring the cohesion and stability of the union.

The primary objective of the European System of Central Banks (ESCB) is price stability, as clearly reflected in Article 127, paragraph 1, of the TFEU, 2010. It shall act in accordance with the principle of an open market economy with free competition, ensuring the efficient allocation of resources, and in line with the principles set out in Article 119, including stable prices, sound public finances, and stable monetary conditions as well as a balanced balance of payments.

Among the various functions of the ESCB is the task of defining and implementing the EU's monetary policy (Art. 127.2 TFEU), for which it carries out both conventional, commonly known measures, and other, non-conventional measures.

As for non-conventional policies, they have been subject to debate, since Article 123 TFEU expressly prohibits the ECB and the national central banks from financing the deficits of the governments of the Member States, including the purchase of government debt. However, it will later be seen that this has been done indirectly through secondary markets to circumvent the prohibition of the rule. Quantitative easing, for instance, has been used under the justification of maintaining price stability in the union.

Traditional instruments, also referred to as conventional measures, are employed to achieve the main objectives, such as controlling inflation, maintaining financial stability, and supervising the banking system (ECB, 2002).

The Eurozone's reference interest rate is one of the traditional instruments used within the framework of the ECB's economic policy. Through this rate, the cost for commercial banks to borrow from the ECB is determined. In turn, the ECB also establishes the deposit interest rate, which is the rate it pays to banks for holding their reserves with the ECB.

Another conventional measure is open market operations, which add or withdraw liquidity from the system through the purchase or sale of bonds and other financial assets in the secondary market. Regular operations inject one-week liquidity (MRO) with short-term interest rates, while longer-term refinancing operations (LTRO) inject liquidity for three months, offering longer-term financing (ECB, 2004). We can also mention fine-tuning and structural operations. The former permanently adjusts the euro system's structural position towards the financial sector, while the latter aims to smooth out the effects on interest rates.

In order to restrict or incentivize the volume of loans granted by commercial banks and national central banks, the ECB can alter the minimum reserve requirement that these institutions must maintain in their accounts with the ECB (Article 19, paragraph 1, of the Protocol on the Statute of the European System of Central Banks and the European Central Bank) (ECB, 2001).

The impact of conventional measures can influence the entire economy, as interest rates affect, among other things, the financing costs for companies and individuals (mortgages, loans, etc.). Moreover, expectations of interest rate increases or decreases (Dovish/Hawkish policy) influence stock markets in the short and medium term.

The ECB's intervention in the foreign exchange market is not a frequent measure, but it can occur to stabilize the value of the euro against other currencies.

Just as there are conventional measures, non-conventional ones have also been prominent in efforts to achieve the Eurozone's objectives, such as asset purchase programs, and quantitative easing (QE)

<sup>1</sup>. This consists of four programs: the corporate sector purchase program (CSPP), the public sector securities purchase program, the asset-backed securities purchase program (ABSPP), and CBPP3. These QE programs have been implemented to inject liquidity into financial markets and reduce long-term interest rates, aiming to stimulate the economy and combat deflation.

Monetary operations involving the purchase and sale of sovereign debt in the secondary markets are carried out to preserve the proper transmission and the singular nature of its monetary policy.

Another non-conventional measure aimed at supporting the effective transmission of monetary policy is the Transmission Protection Instrument (TPI), announced in July 2022, which allows for selective purchases in secondary markets of securities issued in regions where financing conditions deteriorate without justification based on specific country fundamentals. This seeks to mitigate risks that could affect the transmission mechanism in an appropriate manner.

Long-term refinancing operations (LTROs) are considered non-conventional measures. They aim to increase the bank credit granted to Eurozone credit institutions. Subsequently, they evolved into LTRO II and LTRO III in the following periods.

Within the framework of non-conventional measures, it is worth mentioning "Forward Guidance" measures. Through the announcement of maintaining low interest rates for an extended period or until specific objectives are met, central banks can provide guidance on their future policy.

The ECB can opt to buy long-term bonds or sell short-term bonds to control the yield curve, thereby influencing interest rates across different maturities.

If we observe the measures imposed by the ECB over time, it becomes clear that, prior to the 2008 crisis, the ECB followed a conventional monetary policy based on interest rate adjustments to maintain price stability within the Union's economy.

As the crisis persisted, with increasing tensions and the closure of numerous companies, the ECB had to change course and adapt to the new situation by implementing non-conventional measures. It shifted away from adjusting interest rates to taking other measures, such as asset purchase programs initiated in 2009, which included the covered bond purchase program (July 2009 – June 2010), the Securities Markets Program (SMP) (May 2010 – September 2012), and CBPP2 (November 2011 – October 2012). In June 2014, the ECB announced the Targeted Longer-Term Refinancing Operations (TLTROs), which later evolved into TLTRO II (March 2016 – December 2018) and TLTRO III (June 2020 – June 2022). In 2014, it also announced CBPP3, which continued until December 19, 2018. The purchase of asset-backed securities under the Asset Purchase Programme (APP) was approved (November 2014 – December 2018), and the Public Sector Purchase Programme (PSPP) was introduced (March 2015 – December 2018). With the COVID-19 crisis, these measures proved insufficient, leading to the creation of the Pandemic Emergency Purchase Programme (PEPP) and the introduction of eleven emergency longer-term refinancing operations in response to the pandemic.

All of these measures were adapted with the aim of achieving the ECB's 2% inflation target.

Regarding the effects of QE, in the short term, it may help stimulate economic growth, increase liquidity, and thus reduce interest rates. However, in the long term, a dependency on these artificial stimuli from the ECB may arise. When quantitative easing measures are reduced or even eliminated, the economy may face significant difficulties in maintaining similar growth levels without the injections, potentially leading to an economic slowdown. Additionally, the prolonged use of QE can distort financial markets by inflating the prices of certain assets, increasing the risk of financial bubbles and market volatility. Similarly, its continued implementation could lead to uncontrolled inflation expectations or limit the effectiveness of other monetary policy tools. For instance, by accustoming markets to high liquidity and low interest rates, other measures such as long-term refinancing operations or interventions in the foreign exchange market could be affected in terms of their perceived and actual impact. Thus, while its short-term effectiveness may be noticeable, long-term economic stability could be at risk. Therefore, the long-term efficiency of QE is debatable. Quantitative easing increases market liquidity, and if this liquidity results in credit expansion without a corresponding savings base,

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1. Quantitative Easing, in fact, is a translation of the Japanese term *ryōteki kinyū kanwa* (Werner & Richard, 2011).

it can lead to higher inflation. This is because the increase in the money supply is not accompanied by equivalent growth in goods and services, which can drive prices higher. When conducting a cost-benefit analysis of this tool, it is important not only to include short-term results but also to assess the long-term risks and consequences (such as potential inflationary pressures, the creation of asset bubbles, and distortion of incentives for saving and investment).

The objective of this research is to analyze the conventional and non-conventional monetary policies implemented by the European Central Bank, with a special focus on the non-conventional ones, to determine their effectiveness and efficiency, both in the short and long term.

## 2. Theoretical and methodological frameworks

Regarding the theoretical framework, the schools that underpin this study are evaluated (reviewing the relationships between orthodoxy and heterodoxy, Sánchez-Bayón, 2024; Sánchez-Bayón et al., 2023), such as: a) interventionist schools (where the money ultimately belongs to the issuer, meaning the State, and therefore it is compelled to act to preserve it or assist the economy), exemplified by Modern Monetary Theory (MMT), which is rooted in the Chicago School and neo-Keynesianism, as well as the MIT boys (neo- and post-Keynesians); b) liberal schools (where money is considered the property of those who earn it lawfully, allowing them to use it as they see fit while expecting it to maintain its store of value), such as the Austrian School, Anarcho-capitalists, and Neo-institutionalists (Law & Economics, Public Choice, Constitutional Economics, etc.) (Sánchez-Bayón, 2020, 2021a-b, and 2022a-d; Sánchez-Bayón et al., 2022). This study draws on various scientific and academic repositories (e.g., JCR & WoS, Scopus & ScienceDirect, Alt-metrics –Academia, ResearchGate, Semantic Scholar, etc.–, Latindex, Dialnet, IDEAS-RePEc), but especially on the research produced by GESCE-URJC on the dialogue between economic schools concerning monetary issues and cycles (Alonso et al., 2023a-c; Bagus et al., 2021 and 2023; Huerta de Soto et al., 2021; Sánchez-Bayón et al., 2022 and 2023).

As for the methodological framework, a temporal analysis of conventional and non-conventional policies from 1999 to the present will be conducted, examining all the tools, analyzing their effectiveness and efficiency, as well as any existing criticisms, and assessing the effects they have had on the economy, including their impacts on financial markets and the broader economy. The analysis will primarily be quantitative, based on data and statistics provided by primary sources, such as the ECB, regarding each of its programs, and will include secondary sources of expert analysis on the subject. Additionally, through qualitative analysis, the main actions in the field of monetary policy and its instruments will be examined.

The primary data source for this study is the ECB, from which data on interest rates, inflation levels, and the amounts allocated to the programs under study are extracted, all of which are necessary to carry out the empirical study.

## 3. Historical-comparative results of the European Central Bank's measures

It was during the third phase of the Economic and Monetary Union (1999) that the European Central Bank (ECB) took on the responsibility of implementing the monetary policy of the euro area (ECB, n.d.). By then, price stability had already been achieved in the Eurozone, and countries were meeting the convergence criteria outlined in the Maastricht Treaty, such as maintaining sustainable interest rates, controlling inflation, and managing public debt.

To align with its goal of price stability, the ECB set interest rates at low levels from the outset. In December 1998, the ECB set the minimum interest rate for Financial Policy Operations (FPO) auctions at 3%. Additionally, it established the interest rate for the marginal lending facility at 4.5% and the deposit facility at 2%. The reserve ratio was maintained at 2% throughout the entire period from 1999 to 2008. These interest rates remained relatively stable during this period.

At the beginning of the new decade, progressive increases in the minimum interest rate for Financial Policy Operations (FPO) auctions occurred, reaching 4.75% by the end of the year. Similarly, the interest rates for the marginal lending and deposit facilities also increased. These interest rate hikes

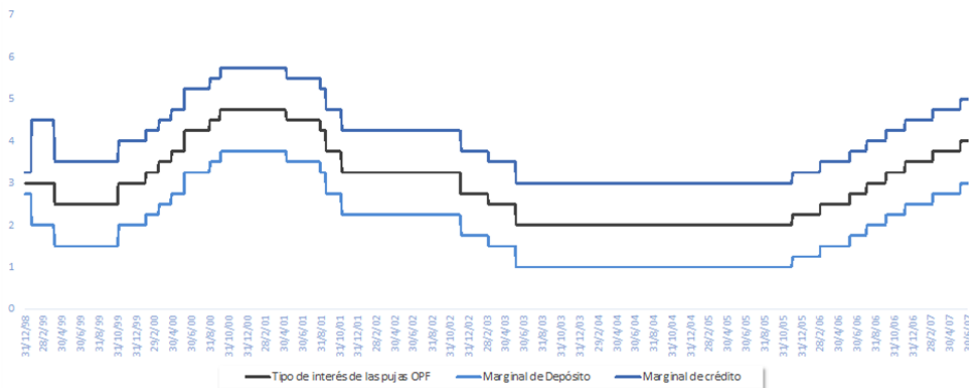
were driven by inflationary pressures observed during this period of economic and monetary expansion, as well as the depreciation of the euro against the dollar in the foreign exchange market.

The period from 2001 to 2003 was marked by reduced economic growth expectations due to the September 11, 2001, terrorist attacks in New York, which triggered investor aversion, leading them to choose more liquid and secure assets. In response, the ECB decided to reduce official interest rates by 275 basis points, lowering the minimum rate for Financial Policy Operations, along with the marginal lending and deposit facilities, to 2%, 3.5%, and 1%, respectively.

In 2003 and 2004, inflation did not increase, despite facing rising energy and commodity prices and an increase in indirect taxes. Therefore, the ECB did not alter official interest rates. In 2005, the Eurozone experienced a slowdown in growth, decreasing from 2.0% to 1.3%. With the year ending with an inflation rate of 1.9%, the Eurozone met its target of keeping inflation below 2%. After two years of not altering interest rates, the ECB decided to raise them in response to rising oil prices, increased liquidity, and improved growth expectations. In the currency markets, the euro-dollar appreciated by only 0.1% throughout 2005, compared to the 9.9% appreciation observed in 2004.

Until 2008, interest rates were increased by 2.25% to set the minimum rate for the main refinancing operations (MRO) at 4.25%, the interest rate for the marginal lending facility at 5.25%, and the deposit facility at 3.25%. These increases in official interest rates were implemented in response to concerns about inflation and economic expansion in the Eurozone. A change occurred in the maintenance period, which, from that point forward, would begin on the settlement day of the main refinancing operation (MRO). This means that banks were required to ensure compliance with minimum reserve requirements throughout the entire maintenance period, which commenced when an MRO was executed. The aforementioned could have implications for the liquidity management of banks and their relationship with the European Central Bank (ECB).

Figure 1. Interest rates from 1999 to 2007.



Source: Own elaboration based on data from the European Central Bank (2004).

The financial crisis of 2008, following the collapse of Lehman Brothers, was a global collapse in financial markets that resulted in a worldwide economic recession. It was triggered by the housing bubble and the subprime mortgage crisis in the United States and quickly spread internationally due to financial interconnectedness. The complexity of the Eurozone, with its heterogeneous economies, contributed to a double-dip recession in the European Union. The subprime financial crisis in the United States and the public debt crisis impacted the Eurozone. Speculation and concern about the solvency of peripheral economies generated instability in global financial markets. The crisis led to a series of government rescue measures and significant regulatory changes in the financial sector. This considerable instability prompted the Governing Council of the European Central Bank to begin implementing new measures, in this case, unconventional measures, simultaneously with reductions in

official interest rates, in an effort to ensure price stability. The unconventional measures taken until June 2014 focused on addressing the transmission mechanism of monetary policy.

Regarding the conventional measures implemented following the onset of the crisis, these included reducing interest rates to historically low levels. By the end of 2008, the minimum rate for main refinancing operations (MRO) was set at 2.5%, the interest rate for the marginal lending facility at 3%, and the deposit facility at 2%. The minimum reserve requirement was maintained at 2% until 2011.

In relation to the unconventional measures, asset purchase programs were initiated starting in 2009 (What are asset purchase programs?, n.d.). First, the Covered Bond Purchase Programme (CBPP1) was executed on July 2, 2009, concluding on June 30, 2010, after reaching a nominal amount of 60 billion euros (ECB/2009/16, 2009). The bonds acquired were backed by assets such as mortgages and bank loans. Concurrently, the minimum bid rate began in 2009 at 2% and continued to decrease progressively, closing the year at 1%, where it remained constant until March 2011. Meanwhile, the interest rate for the marginal lending facility from May 2009 to March 2011 remained fixed at 1.75%, while the interest rate for the deposit facility during the same period was 0.25%.

Continuing chronologically with the unconventional measures, from May 2010 until September 2012, the Securities Markets Programme (SMP) was launched to address market tensions that acted as a hindrance to the transmission mechanism of monetary policy (ECB, n.d.). In order to maintain unchanged liquidity conditions, the Eurosystem proceeded to withdraw the liquidity provided through the SMP via weekly liquidity absorption operations until June 2014.

In November 2011, the second Covered Bond Purchase Programme (CBPP2) was initiated, with a nominal amount of 40 billion euros, distributed across the Eurozone and executed through direct purchases in the primary and secondary markets (ECB/2011/17 of November 3, 2011). The programme concluded on its scheduled date: October 31, 2012.

The conventional measures carried out in parallel included raising the minimum bid rate in April 2011 to 1.25%, and in July to 1.5%, followed by a decrease in November, closing 2011 at 1%. The interest rate for the marginal lending facility also increased in the same months: April (2%) and July (2.25%), and decreased in November (2%) and December (1.75%). The same applies to the interest rate for the deposit facility: April (0.5%), July (0.75%), November (0.5%), and December (0.25%).

In January 2012, the minimum reserve requirement was reduced from 2% to 1%, remaining unchanged to this day. In July 2012, downward changes in the rates occurred until the end of the year: the minimum bid rate for main refinancing operations (MRO) was set at 0.75%, the marginal lending facility at 1.5%, and the deposit facility at 0%.

In August 2012, the ECB Council announced the possibility of executing Outright Monetary Transactions (OMTs) in the secondary markets for sovereign debt to preserve adequate concession and the unique character of monetary policy. These operations were originally designed to be linked to a macroeconomic adjustment programme or a precautionary programme of the European Stability Financial Mechanism (EFSF) / European Stability Mechanism (ESM). Although the OMTs have never been used since their announcement, they remain part of the ECB's available tools.

Since July 2013, the ECB has provided forward guidance on its future interest rate policy and asset purchases. This represents a significant change in its communication strategy, as it involves informing not only about the current assessment of economic conditions and risks to medium-term price stability but also about how this assessment will affect the future direction of its monetary policy. With these communications, the ECB anticipates a response from central banks. Thus, with the announcement of rate reductions, central banks will lower their own interest rates, knowing the possibility of obtaining cheaper financing.

The behavior of interest rates in 2013 was characterized by two decreases in the minimum bid rate for main refinancing operations (MRO): in May (0.5%) and November (0.25%), and in the marginal lending facility: in May (1%) and November (0.75%). The interest rate for the deposit facility remained at 0% throughout 2013.

In 2014, two reductions occurred in the minimum bid rate for MRO (0.15% in June and 0.05% in

September) and in the marginal lending facility rate (0.40% in June and 0.30% in September).

The unconventional measures taken up to that point proved ineffective, as the interest rate cuts and liquidity injections did not alleviate tensions in the markets. In response, the ECB considered implementing new measures.

In June 2014, the ECB implemented negative interest rates for the deposit facility in hopes of improving the effectiveness of monetary policy on the real economy and raising inflation. As inflation was diminishing and there were concerns about the slowdown in economic growth, the ECB sought to adopt expansionary policies to try to raise inflation toward its target. This involved lowering interest rates and, in some cases, purchasing financial assets to inject liquidity into the markets and reduce long-term interest rates.

The first negative interest rate for deposit facilities was introduced in June 2014 at -0.10%, continuing to decrease in September to -0.20%. With this measure, the ECB aimed to discourage credit institutions from depositing their money with the central bank, instead encouraging them to use it to provide credit to businesses and households. For this reason, the same negative rate was also applied to excess reserves that banks maintain at the ECB above the minimum requirements.

In parallel, in June 2014, the ECB announced longer-term refinancing operations (TLTROs) in response to the economic and financial situation in the Eurozone at that time, aiming to promote the flow of bank credit to the real economy in order to incentivize investment and spending, raise inflation, and strengthen financial stability in the Eurozone. The TLTROs were initially designed for two years and were to consist of eight quarterly capital injections at minimum interest rates (0.25% in September 2014, 0.05% in 2015, and 0% in 2016).

Between October 20, 2014, and December 19, 2018, the CBPP3, that is, the third covered bond purchase program, was included, during which the first net purchases of covered bonds were made (ECB/2014/40 of October 15, 2014).

Another unconventional measure approved subsequently was the purchase of asset-backed securities (APP), which took place between November 21, 2014, and December 19, 2018 (ECB Decision/2014/45 of November 19, 2014).

Regarding conventional measures in 2015, the minimum bid rate for main refinancing operations (MRO) was maintained at 0.05%. The marginal interest rate for the lending facility stood at 0.3%, while the deposit facility interest rate was reduced from -0.2% to -0.3% in December 2015.

Since March 2015, the ECB has developed a quantitative easing (QE) program aimed at inflating the economy, with an approach quite similar to that adopted by the Federal Reserve of the United States. This was intended to continue stimulating economic flow.

From March 9, 2015, to December 19, 2018, the ECB executed net purchases of public sector securities under the public sector purchase program (PSPP) (ECB Decision/2015/10 of March 4, 2015).

In March 2016, TLTROs II (Targeted Longer-Term Refinancing Operations II) were launched. In this instance, these operations had a maturity of up to four years. The introduction of specific targets aimed to prevent financial institutions from obtaining funds to invest in government bonds or simply depositing them at the ECB, instead of using those resources to provide loans to the private sector of the economy, which includes households and businesses.

Two months after the launch of TLTROs II, following ECB Decision/2016/16 of June 1, 2016, the net purchases program for corporate bonds (CSPP) was initiated, which was set to run until December 2018. This program involved the purchase of corporate bonds from Eurozone companies, aimed at improving financing conditions for businesses and stimulating investment.

The conventional measures taken in 2016 included a continuation of the downward trend in interest rates in March. The minimum bid rate for MRO was set at 0%. The marginal interest rate for the lending facility was at 0.25%, and the deposit facility rate was at -0.4%, measures that were maintained until the end of 2018.

In 2017, there was a reduction in asset purchases to €60 billion, and the following year to €15 billion.

Regarding the full reinvestment of assets, the ECB announced at the Governing Council meeting in December 2018 its intention to continue this policy "for an extended period of time" following the eventual first increase in interest rates, thereby creating a connection between the two measures known as "chained forward guidance."

With respect to the conventional policy in 2019, the minimum bid rate for main refinancing operations (MRO) was maintained at 0%, and the marginal interest rate for the lending facility remained at 0.25%, while the marginal interest rate for the deposit facility decreased to -0.5% in September. These values were held until July 2022. The reduction in the marginal interest rate for the deposit facility was implemented to encourage banks not to hold large amounts of money in their accounts at the ECB and instead to lend or invest those funds in the real economy. By establishing a negative interest rate, the ECB essentially charges banks for holding their excess cash at the central bank, creating an incentive for them to use those resources for productive economic activities.

In March 2019, TLTRO III was announced and began to be applied in June of that same year. They were positioned as a continuation of TLTRO II and were designed to provide long-term financing at favorable interest rates to banks in the Eurozone with the goal of promoting lending to businesses and households.

The Eurosystem only reinvested the payments from maturing securities held in the CBPP3, ABSPP, and CSPP portfolios from January to October 2019. These purchases were resumed from November 1, 2019, until the end of June 2022.

In 2020, with the arrival of COVID-19, the ECB had to react in an "ambitious, coordinated, and urgent manner across all fronts to support households and businesses at risk," as indicated by Christine Lagarde in her statement of March 19, 2020 (Our response to the coronavirus emergency, 2020).

As a result, the Governing Council of the European Central Bank (ECB) announced on Wednesday a new Pandemic Emergency Purchase Program (PEPP), amounting to €750 billion until the end of the year, in addition to the €120 billion agreed upon on March 12 (ECB/2020/17 of March 24, 2020) (ECB, 2020). In total, this represents 7.3% of the Gross Domestic Product (GDP) of the euro area. Furthermore, an additional €600 billion was added on June 4, 2020, and €500 billion on December 10, bringing the total to €1.850 trillion. In December 2021, the ECB Council agreed to halt the PEPP at the end of March 2022, while maintaining the reinvestment of maturing capital payments until at least the end of 2024.

The adaptation of the TLTRO III and its implementation from June 20, 2020, to June 23, 2022, occurred as part of the ECB's monetary policy in response to the COVID-19 pandemic and its economic effects (PELTRO). Among the measures, banks can obtain financing from the ECB at -1% (an interest rate 0.5 percentage points lower than the applicable deposit facility rate) to encourage the granting of credit to households and businesses. In 2021, the ECB offered favorable conditions for the TLTRO to incentivize banks to lend money to companies and households.

The year 2022 unfolded in a scenario where inflation was the central theme (J.P. Morgan, 2022). In July 2022, inflation stood at 8.9%, and the outlook for improvement was not optimistic. With the goal of returning inflation to 2%, aggressive conventional measures were taken. On July 27, 2022, there was an increase in interest rates by 50 basis points, leaving the minimum bid rate for OPF at 0.5%, the marginal lending facility rate at 0.75%, and the deposit facility rate at 0%. Within a month and a half (September 2022), there was another aggressive increase of 75 basis points, resulting in a minimum bid rate for OPF of 1.25%, the marginal lending facility rate at 1.5%, and the deposit facility rate rising to 0.75%, after remaining at negative values and 0% for 10 years.

Regarding the CBPP3, ABSPP, and CSPP portfolios, between July 2022 and February 2023, the reinvestment of payments for maturing securities took place. Starting in March 2023, only the principal payments of maturing securities were reinvested, and in July 2023, the Eurosystem suspended reinvestments. From March to June 2023, the portfolios of the asset purchase program were reduced by €15 billion, in a process known as "quantitative tightening." At its peak in 2022 and 2023, the Eurosystem held more than €3.2 trillion in assets as part of the asset purchase program.



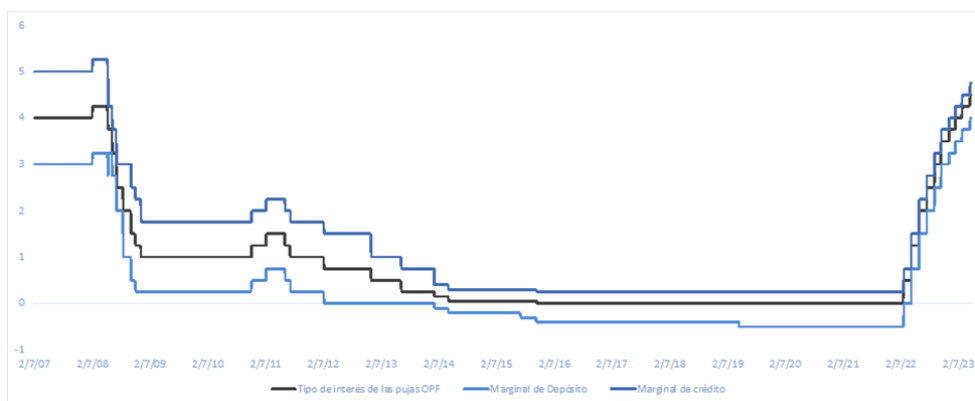
On December 21, all rates experienced a further increase of 50 basis points, followed by two additional increases of 50 basis points until March 22, 2023, resulting in a minimum bid rate for OPF of 3.50%, a marginal lending facility rate of 3.75%, and a deposit facility rate of 3%. Starting in May, there were four increases of 25 basis points in May, June, August, and on September 20, reaching a minimum bid rate for OPF of 4.5%, a marginal lending facility rate of 4.75%, and a deposit facility rate of 4%.

According to the August 2023 report by J.P. Morgan: “The overall inflation in the euro area provided a better-than-expected reading and remained stable in August at 5.3% year-on-year. However, underlying inflation did fall slightly, decreasing from 5.5% year-on-year in July to 5.3% year-on-year in August.” Despite this correction, these values remain well above the euro area target (J.P. Morgan, 2023).

In the ECB’s press release dated September 14, 2023, they conveyed the forecast for an average inflation rate of 5.6% in 2023, 3.2% in 2024, and 2.1% in 2025 (with an upward revision for 2023 and 2024 and a downward revision for 2025). Regarding the growth of the euro area economy, growth is expected to be 0.7% in 2023, 1% in 2024, and 1.5% in 2025 (ECB, 2023). The Governing Council of the European Central Bank intends to take measures to ensure that the ECB’s official interest rates are set at sufficiently restrictive levels in the future for as long as necessary, in response to inflation.

The clarification made in this press release regarding the unconventional measures taken is the non-reinvestment of the principal of the maturing securities from the asset purchase program (APP). In relation to the PEPP, the Governing Council plans to reinvest the principal of the assets acquired under the program as they mature, at least until the end of 2024. However, the eventual liquidation of the PEPP portfolio will be carried out in a manner that does not interfere with the proper orientation of monetary policy. Long-term financing operations will be evaluated periodically by the Governing Council.

Figure 2. Interest rates for the period from 2008 to 2023.



Source: Own elaboration based on data from the European Central

#### 4. Discussion on the effectiveness and efficiency of non-conventional measures taken by the European Central Bank

The adoption of unconventional monetary policies by the European Central Bank (ECB) has been a crucial response to several periods of economic and financial crises, the most notable being during the COVID-19 pandemic. These measures, although designed to stabilize and stimulate the eurozone economy, have generated intense debate regarding their effectiveness and efficiency. Below, the main components of these unconventional policies are discussed, and their impact and the controversies they have sparked are analyzed.

- a) **Negative Interest Rates** In 2014, the ECB implemented negative interest rates, reducing the deposit facility rate to  $-0.10\%$ . This move aimed to make saving less attractive and borrowing cheaper, thereby incentivizing spending and investment. However, internal ECB research indicates that this effect may reverse at extremely low rates, with an observed increase in savings among less-educated and older consumers. This suggests the existence of a "savings reversal" and raises doubts about the effectiveness of negative rates in stimulating the economy.
  - b) **Asset Purchase Programs** Asset purchase programs, or Quantitative Easing (QE), have been another key tool in the ECB's unconventional strategy. From the CBPP1 to the PEPP, these programs aimed to improve financing conditions and stimulate the economy through the purchase of financial assets. Although they achieved certain immediate goals, such as reducing swap contract spreads and increasing liquidity, their impact on the real economy has been mixed. Critics focus on their potential to distort market prices, induce moral hazard, and fail to address the underlying causes of the economic crisis.
  - c) **Forward Guidance** Implemented since 2013, the ECB's forward guidance has provided clear communication about future monetary policy intentions. Although it has helped reduce uncertainty and guide expectations, its reliance on the central bank's credibility and the potential to encourage excessive risks and asset bubbles raise questions about its efficiency.
  - d) **Long-Term Refinancing Operations (TLTROs and PELTROs)** TLTROs and PELTROs offer long-term financing to banks under favorable conditions, tied to lending to businesses and households. Although they have provided essential liquidity support, the effectiveness of these operations in directly stimulating the real economy remains debated. Additionally, concerns about the equitable distribution of financing and the impact on the independence of national fiscal policies persist.
- The effectiveness of the ECB's unconventional monetary policies has been significant in terms of immediate relief and financial stabilization. However, their long-term impact and effects on the real economy are less clear. While they have successfully reduced financing costs and improved monetary conditions, concerns remain regarding their ability to foster sustainable economic growth, control long-term inflation, and avoid financial and moral risks.
- Moreover, the effectiveness of these measures is influenced by the broader economic and financial context, including the fiscal policies of eurozone countries and global market dynamics. Therefore, a successful strategy would require not only the careful use of unconventional monetary tools but also effective coordination with sound fiscal policies and structural reforms.
- The ECB's unconventional monetary policies have played a crucial role in stabilizing the eurozone economy during periods of crisis. However, their effectiveness and efficiency remain topics of debate, underscoring the need for a balanced and coordinated approach.

## 5. Conclusions

Both conventional and unconventional monetary policy strategies have been adopted by the ECB in its pursuit of maintaining price stability and economic cohesion within the eurozone, a task that has been hindered at certain historical moments due to the challenge of integrating such a diverse set of economies within the framework of the European Union.

Upon analyzing the measures taken before, during, and after the 2008 financial crisis, including plans to combat the economic setbacks caused by the COVID-19 pandemic, a series of actions following similar lines can be observed. During periods of economic expansion and the need to increase inflation, measures focused on lowering interest rates (Graph 1.1. Interest rates from 1999 to 2007). From 2008 onward, unconventional measures such as quantitative easing (QE) programs, forward guidance, and longer-term refinancing operations began to be introduced, often combined with conventional measures to achieve their objectives.

When evaluating their effectiveness, they have been proven to yield certain short-term corrections. However, their long-term effectiveness has been less clear, as it has been shown to have severe consequences for the future stability of the economy. Thus, the overuse of these unconventional monetary

policies could lead to unfavorable long-term scenarios, such as creating dependency on these artificial stimuli and capital injections, distorting financial markets, increasing the risk of financial bubbles, and exacerbating market volatility.

Going back to the origins of the term QE, it can be traced to the Bank of Japan, where Quantitative Easing referred to the measures adopted from 2001 to 2006 in response to the prolonged deflation and economic stagnation that followed Japan's real estate bubble in the 1990s. Its primary objective was to provide the necessary liquidity to the banking system through the purchase of government bonds, thereby supplying liquidity to businesses and individuals, raising prices, and thus increasing inflation. However, while the adoption of QE by central banks in Europe, the United States, and the United Kingdom shared some similarities with the Japanese approach, there were differences in objectives and execution. In Europe and the United States, QE was used as a tool to stimulate the economy following the 2008 financial crisis. The U.S. Federal Reserve and the European Central Bank, for example, implemented QE programs to lower long-term interest rates, raise inflation to desired levels, and stimulate investment and spending. This was achieved through the purchase of government bonds and other financial assets, thereby injecting liquidity into financial markets and the broader economy.

In terms of Quantitative Easing, there is concern about the potential for a bond market bubble in Europe as a long-term consequence of this unconventional measure. It has been observed that this program has elevated bond prices in the European fixed-income market to levels that seem to be artificially maintained by the extensive debt purchases by the ECB. A notable indicator of this was the appearance of negative yields on 10-year German bonds during the summer of 2016, suggesting that some investors were willing to incur losses to finance others. However, the underlying reality appears to be that these investors were not aiming to hold the bonds until maturity but rather to profit from price fluctuations induced by ECB purchases. Essentially, this is a market artificially sustained by the ECB, which has benefited financial speculators. This phenomenon raises a critical question: Will the sovereign debt market be able to function independently once QE ends and other liquidity measures are withdrawn? Or, conversely, will it face a collapse in the absence of the ECB as the primary buyer, driving the cost of debt for some countries to unsustainably high levels?

Warren Buffett's well-known quote, "Only when the tide goes out do you discover who's been swimming naked," aptly describes the current economic landscape. It suggests that only when the European Central Bank (ECB) withdraws its stimulus measures will it become clear which countries have implemented essential structural reforms and which have relied excessively on the ECB's mass debt purchases without making productive changes. The potential bubble in the fixed-income market extends beyond bond markets. Since Mario Draghi's famous "whatever it takes" speech in July 2012, European equity markets have been positively influenced to varying degrees by the declarations of the former ECB president.

However, while equity markets are indirectly affected by the liquidity provided by the ECB, sovereign debt markets are the ones that react most directly to debt-purchasing policies. Alan Greenspan, former Chairman of the Federal Reserve, warned in an August 2017 interview with Bloomberg that real interest rates close to 0% are unsustainable in the long term (Greenspan, 2017). He emphasized that when interest rates begin to rise—which has already occurred in some cases, such as with the Federal Reserve—they will do so quickly, leading to a significant drop in bond prices. In fact, prominent figures in the fixed-income market, such as Bill Gross, stated in a January 10, 2018 interview with Bloomberg that the existence of a massive bond market bubble, stemming from the ultra-liquid policies of major central banks, is well-documented (Gross, 2018).

Additional structural reforms may need to be implemented to improve expectations for the Eurozone. While QE policies are effective in the short term for stimulating the economy and have notably influenced asset prices and various types of debt, their concrete impact on the real economy remains less clear. Additionally, the high levels of household and corporate debt may restrict the efficacy of these monetary stimuli.

The use of techniques such as forward guidance, constructive ambiguity, and the threat of sanc-

tions, as well as effective financial regulation, has proven beneficial both in preventing problems and implementing effective solutions. Moreover, the COVID-19 crisis, with its unforeseen nature, has broadened the range of phenomena and, consequently, the statistical indicators that central banks need to monitor (Rosolia, 2021; Stapel-Weber, 2021; Tissot, 2021). This has led to an accelerated development of policies during crisis periods. Regarding the effectiveness of unconventional measures, Benigno (2022) notes that actions such as the PEPP and PELTRO, together with forward guidance, have had a limited but significantly positive impact during the pandemic. Bernanke (2020) suggests that these new tools should be integrated into conventional monetary policies, as their effectiveness can be enhanced with better execution and public understanding, without neglecting the importance of constant financial supervision and oversight. On the other hand, it has been observed that the use of these monetary tools has been effective in combating pandemic-induced inflation, but has exacerbated unemployment, highlighting the need for policy collaboration and the joint creation of policy packages by governments and central banks. However, another important issue arises, which is the difficult convergence of policies due to the significant differences in the composition of the economies that make up the Eurozone. As a result, applying a general approach does not guarantee successful outcomes, as it conflicts with the considerable divergence among them.

From the perspective of Austrian School theory, in the end, the intervention of central banks in the economy, especially through expansive monetary policies such as low interest rates and QE, is seen as the primary cause of economic recessions. According to Austrian theory, these policies merely postpone the necessary structural adjustments, preventing the economy from reaching its real productive potential.

The credit expansion triggered by the excess liquidity injected into the economy by central banks is considered the main cause of the imbalance in the allocation of productive resources, exacerbating and delaying the necessary adjustments to return to a dynamic equilibrium. The Austrian School emphasizes the importance of intertemporal coordination between production, savings, and consumption, where aggregate business decisions determine the allocation of resources. In this view, interest rates are crucial for the intertemporal coordination of supply and demand. Therefore, the artificial reduction of interest rates leads to a credit “boom,” not based on a real increase in savings or the supply of loanable funds, but rather on a forced redistribution of resources, which artificially inflates aggregate demand and distorts the economic structure, ultimately leading to a recession. While recessions are considered inevitable and, to some extent, necessary to correct imbalances, some Austrians, such as Hayek, recognize that during a recessionary phase, minimal intervention in the form of countercyclical policies may be acceptable to prevent a secondary contraction, where a heightened preference for liquidity intensifies the recession beyond what is needed for productive restructuring. Thus, monetary policies delay and worsen recessions by preventing the structural adjustments of each of the diverse and distinct economies that make up the Eurozone, adjustments that are necessary for the economy to return to a sustainable equilibrium without long-term consequences, with certain exceptions in situations of secondary contraction.

The risk of second-round effects remains present in many disturbances despite the implications of monetary policy, which can affect real incomes and trigger an inflationary spiral. The ECB recognizes the need for a fair distribution of the burden between wage incomes and business margins to mitigate the impact of economic disturbances on real incomes. Fiscal policy can play a crucial role in this process. There is a risk that persistent disturbances, such as rising energy prices, could unanchor inflation expectations. This could lead to a wage-price spiral that feeds long-term inflation, eroding real incomes and undermining economic stability. The contraction of real incomes due to rising energy prices can negatively affect demand and hinder businesses from passing cost increases onto prices. Furthermore, domestic slowdowns and the simultaneous tightening of global monetary policy could exacerbate these challenges. Although the labor market has shown resilience thus far, there is an increase in inflation expectations and pressure for greater indexing of wages and pensions. This could lead to additional wage pressures in the private sector and increase the risk of second-round effects. The ECB emphasizes

the importance of monitoring inflation expectations and wage negotiations to ensure that wage growth does not become incompatible with the objective of price stability.

## **6. Authorship Contribution**

Cristina Gonzalez Cáceres: [Conceptualization](#), [Investigation](#), [Formal analysis](#), [Writing original - draft](#).

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