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(Original scientific paper)

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## UNCONVENTIONAL MONETARY MEASURES – THE CASE OF THE EUROZONE AND THE ECB

### Abstract

Up until the 90s, the central banks weren't familiar with the so-called "unconventional measures". The standard monetary framework has been fundamentally changed by the BOJ (Bank of Japan) at the beginning of the 21st Century and shortly after that – The Federal Reserve System.

The main objective of the theoretical approach of this paper is to uncover the unconventional monetary framework used by the European Central Bank during the Great Recession and briefly sharing light on the measures used during the COVID-19 pandemic. The research was conducted by analyzing the key moments of ECB's monetary shift according to their assessed and forecasted economic development. This paper focuses on the effectiveness of the unconventional measures, especially about stabilizing financial markets and restoring the functional transmission mechanism by the SMP (Securities Markets Programme) and APP (Asset Purchase Programme) as well as stimulating economic growth and fulfilling ECB's main objective – price stability.

This research notes that the usage of unconventional policies has given the right results especially in lowering the divergence of long-term government securities yields as well as escaping the deflationary trap.

**Keywords:** Unconventional monetary measures, long term yields, policy interest rates, price stability, the Great Recession, quantitative easing

**JEL Classification:** E43, E52

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## **Introduction**

After the Great Depression in the 30s, the world never again witnessed such a potent and massive recession until the Great Recession and possibly during the COVID-19 pandemic in 2020, as the real effects are yet to be estimated. The financial crisis which developed into economic and sovereign debt crises in the Eurozone left a permanent mark on designing and implementing monetary policy. One of the key elements was the lack of strong prudent regulative and effective supervisory institutions, problems that were mainly targeted by implementing the Basel III framework in 2010. Carlin and Soskice (2015) note that the main reasons behind the crisis were the search for higher yield by both retail and investment banks, the largely popularized usage of securitization, and the housing bubble – all emerging from the US. Low interest rates during 1999-2005 encouraged indebtedness by both households and banks in the US. The usage of sub-prime mortgages as a referent portfolio in creating the famous MBS (Mortgage Backed Securities) was potentially dangerous as the rise in residential property values started looking like a bubble, which it was. As FED took restrictive measures following the rise in oil prices the monetary authorities unwillingly burst the housing bubble.

Developing a set of new and unconventional measures by the central bank was critical to overcoming the massive recession during the 2008-2010 period. Policy interest rates were quickly slashed down to nearly zero as a first reaction. Especially vulnerable were developed market economies with both deep and complex financial sector and markets. The ECB used the SMP which targeted the malfunctioning transmission mechanism, as stated by Kozicki et al. (2011).

## **1. FINANCIAL AND SOVEREIGN DEBT CRISES IN THE EUROZONE**

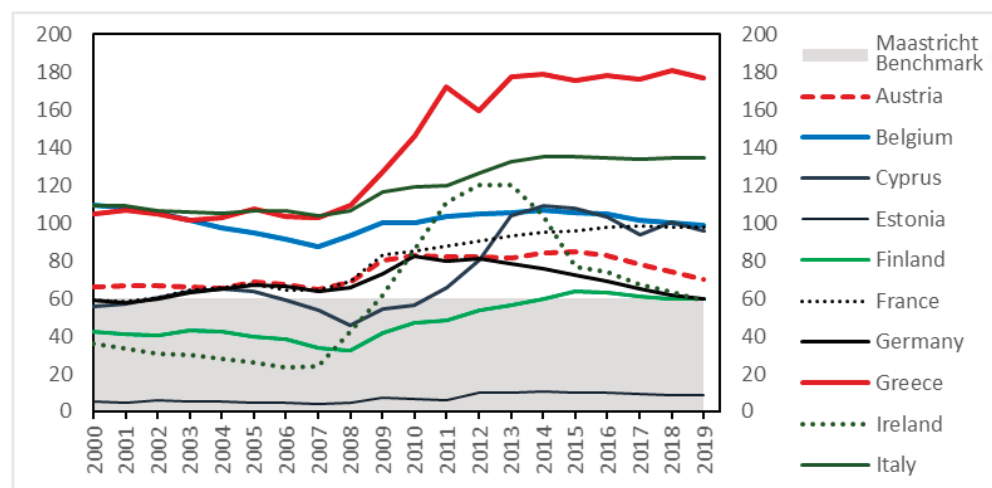
There is a significant difference between the “first” and the “second” crisis in the Eurozone. The key difference is that the prior is a result of increased global financial insecurities and it’s somehow imported into the Eurozone system. The latter is a product of numerous domestic factors, such as the housing bubble in Spain and Ireland and irresponsible fiscal policy in Greece, Portugal and Italy, as stated by Neri and Siviero (2019). Since the Eurozone is a monetary union it restricts its members from using autonomous

monetary policy. Baldwin and Wyplosz (2012) note that using the national exchange rate and the monetary policy to target shocks are now nonexistent and members rely solely on autonomous fiscal policy.

### 1.1. The rising indebtedness of Euro Area members

Ben Bernanke (2007) defines financial crises as extreme disruptions to the normal functioning of financial markets<sup>1</sup>. After Lehman Brothers went bankrupt in September 2008, which can be noted as the official beginning of the crisis, some central banks (including the ECB) decided to cut their policy rates. Their lowering was meant to initiate economic growth but soon after, central banks found themselves at the ZLB unable to additionally stimulate the economy. Besides that, some of them like the BOE (Bank of England) and the FED started using quantitative easing early on, while the ECB started at a later point. As noted by Carlin and Soskice (2015), quantitative easing is aimed at longer-maturity yields by pushing them down since short term yield is already lowered by conventional instruments.

**Graph 1: General government gross debt as % of GDP, selected EA members, 2000-2019**

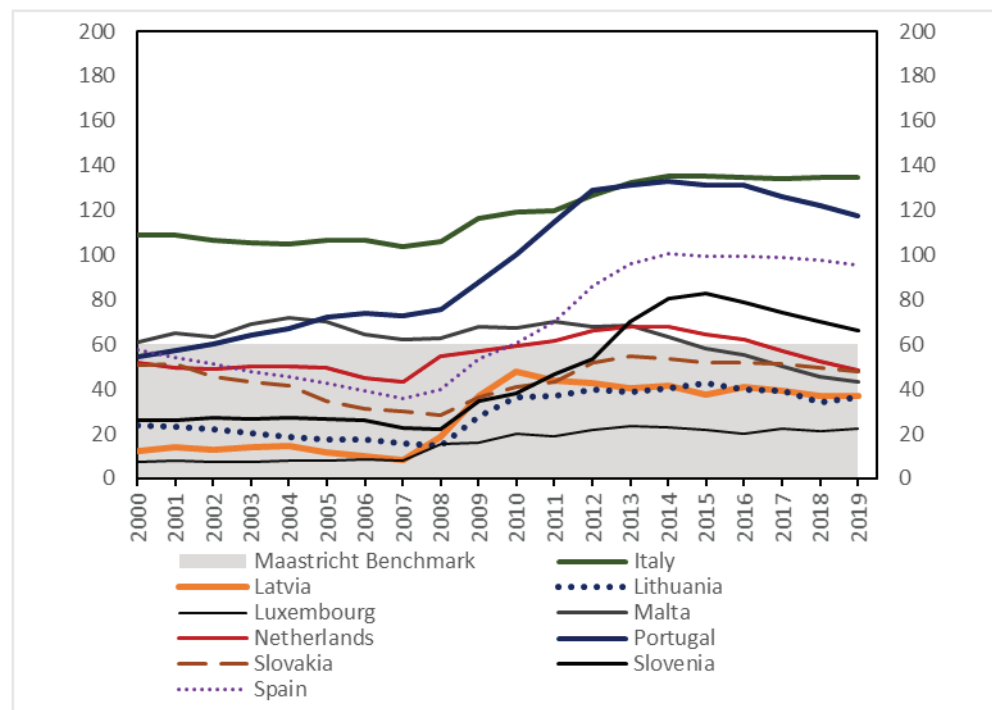


Source: Eurostat – General government gross debt, sdg\_17\_40; author's depiction (access date 28/07/2020)

<sup>1</sup> See Ben Bernanke's speech on June 15th 2007, entitled The Financial Accelerator and the Credit Channel, as stated by Carlin, W. and Soskice, W. D.: *Macroeconomics: Institutions, instability and the financial system*, Oxford University Press Inc., New York, 2015, p. 80-115.

While most of the countries experienced a low to moderate increase in government gross debt, the countries that were most vulnerable during the 2008-2013 period were Greece, Ireland, Italy, Portugal and Spain. Each of them faced a dramatic increase in government debt during that period, which soon became critical. As depicted in Graph 1 and Graph 2, between 2008 and 2013, Greece, Ireland, Italy, Spain and Portugal increased their Debt/GDP ratios for +68 p.p., +77.5 p.p., +26.3 p.p., +56.1 p.p. and +55.8 p.p., respectively. In the time frame of 2013-2019, they managed to lower their indebtedness by -0.8 p.p., -61.1 p.p., +2.3 p.p. (Italy faced additional increasing), -0.3 p.p. and -13.7 p.p., respectively. Almost all of the EA and EU members imposed fiscal tightening to stabilize the government's indebtedness. These five selected countries were the once targeted by the first unconventional monetary measure – the SMP, through their galloping government bond yields which significantly disrupted the transmission mechanism.

**Graph 2: General government gross debt as % of GDP, selected EA members, 2000-2019**



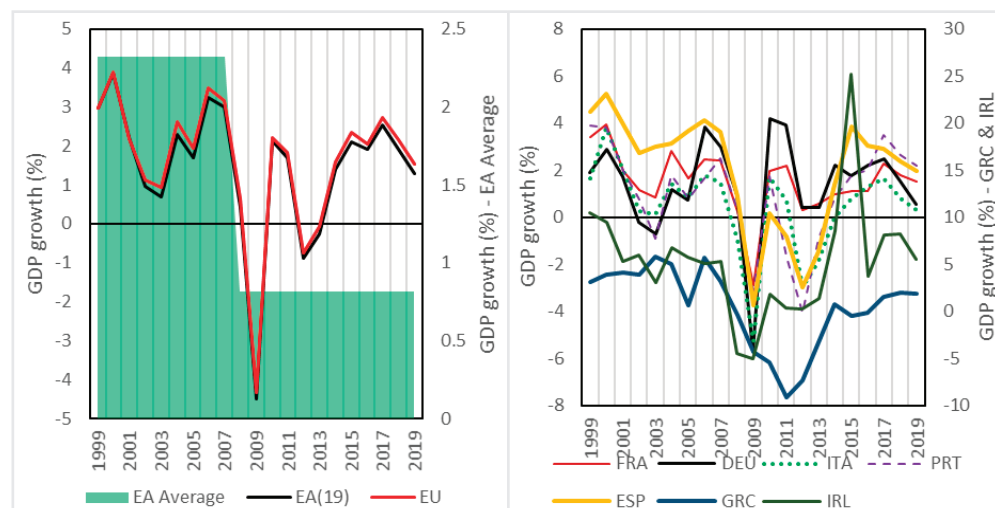
Source: Eurostat – General government gross debt, sdg\_17\_40; author's depiction (access date 28/07/2020)

## 1.2. The economic slump

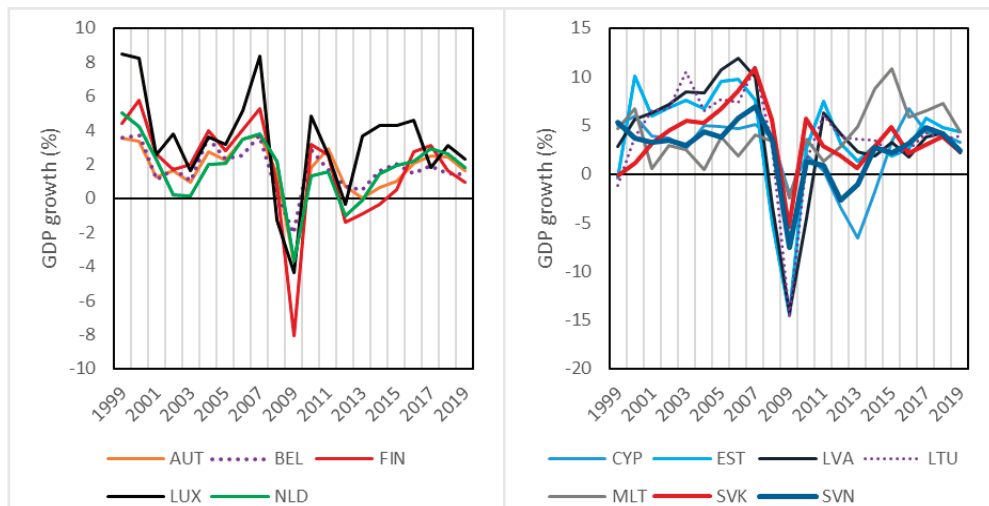
Besides growing risks from the rising indebtedness, the Eurozone faced another problem – weak economic growth. As the crisis developed, both member states and the ECB decided to use expansionary policies. As shown in Graph 3, the Eurozone before the crisis had 2.3% annual GDP growth on average for the period of 1999-2007. On the other hand, the massive impact that the Great Recession has made, lowered the average growth to just 0.8% from 2008 through 2019. This is one of the main reasons why the ECB decided to take action to initiate higher levels of investment and consumption – components that are key for stirring up aggregate demand.

While the European economy finally started picking up, the COVID-19 pandemic took its toll. Countries that are largely dependent on industrial production and tourism were the ones that suffered the largest plummeting of GDP. In Q1 of 2020, France, Spain and Italy registered -5%, -4.1% and -5.4% GDP growth, respectively. Germany registered -2.3%, Belgium -2.5%, the Netherlands -0.4% and Austria -2.6%. The Eurozone as a whole registered -3.1%, which is the largest fall since the 2009/2010 period<sup>2</sup>. Such economic developments show that both unconventional measures and rising government debt are here to stay, at least until the end of the pandemic.

**Graph 3, Graph 4, Graph 5 and Graph 6: Annual GDP growth rates in %, selected countries, 1999-2019**



<sup>2</sup> Quarterly data for GDP growth in 2020Q1 are registered by the Eurostat – Gross domestic product volumes, percentage change, teina011 (access date 28/07/2020).



Source: The World Bank, GDP growth (annual %), last updated date 01/07/2020; authors depiction (access date 28/07/2020)

## 2. STANDARD MONETARY FRAMEWORK OF THE EUROPEAN CENTRAL BANK

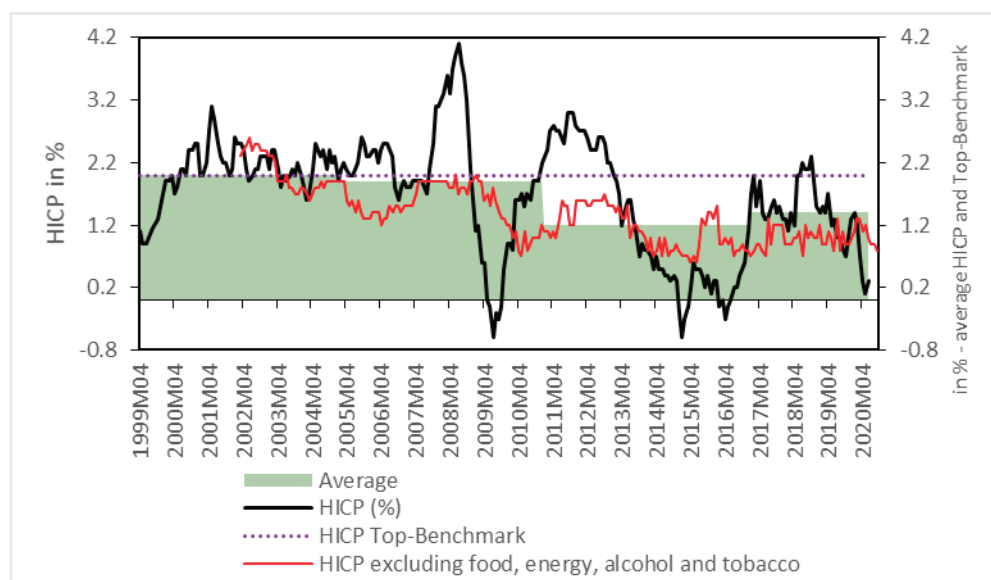
The European Central Bank, through its monetary instruments, influences both interest rates and liquidity in the economy. Its main objective is to ensure price stability and achieves it in coordination with the national central banks of its members. Under price stability, it's assumed low and stable inflation, sufficient enough to ease future planning of the economic agents, and to create such an environment that supports economic growth. Even though price stability is imposed as a primary objective in modern times, high employment, economic growth, stable financial and foreign exchange markets, as well as stable interest rates, should be part of the broad monetary objectives.

Even though some central banks have more than one objective in its mandate, the ECB has only one – price stability. It is defined as the *annual growth of the HICP (Harmonized Index of Consumer Prices) in the Eurozone below, but close to 2% over the medium term*. This notes that the ECB has quantitatively defined price stability like the BOE and the BOJ. Graph 7 depicts ECBs effectiveness in maintaining price stability. The average levels are divided into 5-year intervals (except for the last one) in order to grasp the medium term. Until 2011, the ECB successfully maintains price stability, as it's defined, with average levels of 2.0% and 1.9%. But after the Great Recession, the ECB enters

a long period of battling lower inflation with average levels of 1.2% and 1.4%.

After excluding food, energy, alcohol and tobacco the graph shows that the major shifts in HICP are mainly due to these categories, especially around 2008 and 2020 (with the drastic fall in oil prices and the COVID-19 pandemic). Entering the deflationary zone in 2009M06, 2015M03, 2016M05 and almost reaching deflation in 2020M05 were clear signals that the ECB needed to quickly raise inflation expectations and escape the deflationary trap which further increases the negative financial accelerator process, as stated by Carlin and Soskice (2015). This was one of the main reasons why the ECB decided to sharply cut down interest rates in the first place and then start using unconventional policies to boost aggregate demand and inflation expectations.

**Graph 7: HICP (%) in the Eurozone, monthly data, 1999-2020**



Source: Eurostat, HICP monthly data (annual rate of change), last update 17/07/2020; authors depiction (access date 29/07/2020)

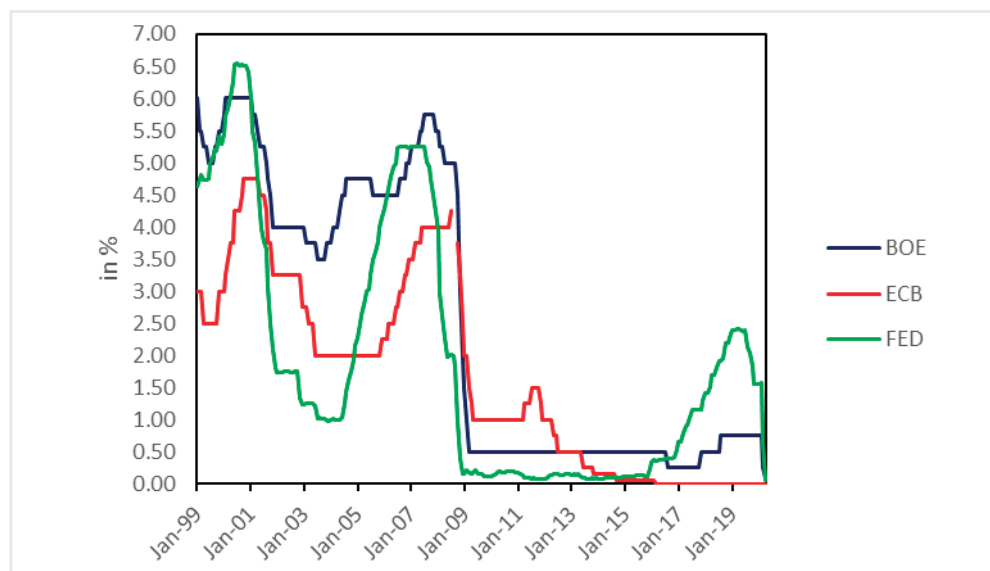
As illustrated in Graph 8, all three central banks took drastic measures as an answer to the Great Recession. Since they all reached or came close to the ZLB (zero lower bound), the standard toolkit became ineffective in further stimulating their economies. The ECB lowered its rate from 4.25% to 1.00% in just 10 months. On the 19th of March in 2016, the Governing Council decided to implement a zero interest rate policy and kept it at that point since then. Unlike the BOE and the FED which had a brief history of restrictive monetary



policy in the 2016-2020 period, the ECB has kept its stance as expansive as it can be, since the Eurozone hasn't made a full recovery to pre-crisis levels.

Another fact that is worth mentioning is the progression from variable to fixed-rate tenders in November 2008. At normal times when the market determines the interest rate, it always reflects the real economic situation. On the other hand, like the period of the Great Recession, the structural need for liquidity would impose a higher interest rate than the economy needs. For example, when the expansive policy is necessary, the market would push up the interest rates as a consequence of the auctioning with higher rates by the banks that need liquidity the most. That's why the ECB imposes fixed-rate at abnormal times, as illustrated by Graph 9.

**Graph 8: Key policy interest rates, BOE, FED and ECB, monthly data, 1999-2020**

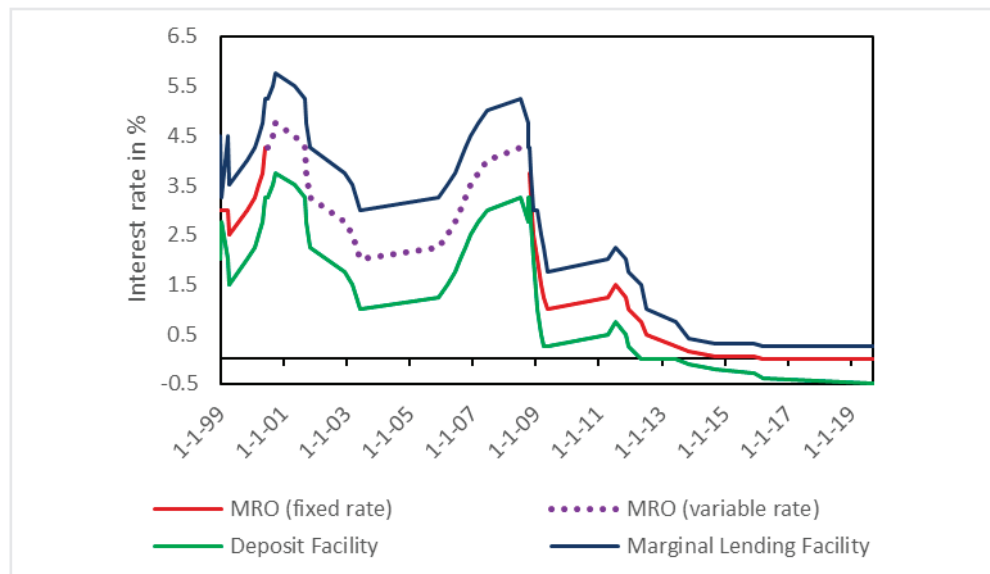


Source: Federal Reserve Bank of St. Louis, Effective Federal Funds Rate, Available at <https://fred.stlouisfed.org/series/FEDFUNDS> (access date 29/07/2020); Bank of England, Interest rates and Bank Rate, Available at <https://www.bankofengland.co.uk/monetary-policy/the-interest-rate-bank-rate> (access date 29/07/2020); ECB, Key ECB interest rates, Available at [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) (access date 29/07/2020); authors depiction

The Marginal Lending and Deposit Facility determine the upper and lower boundary of the money market rate. On 29th of July 2020, the MRO (Main Refinancing Operations) rate is fixed at 0%, the Marginal Lending Facility is 0.25% and the Deposit Facility stands at -0.50%.



**Graph 9: ECB's key interest rates, by date of implementation, 1999-2020**



Source: ECB, Key ECB interest rates, Available at [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) (access date 29/07/2020); authors depiction

### 3. UNCONVENTIONAL MONETARY MEASURES

There is a vast number of interpretations in the literature that specifically include unconventional monetary measures. The main goal is to maintain monetary power in conditions when the fiscal policy is powerless or with little room for maneuver. Even though the ECB had sufficient space to implement conventional policies, the crisis distorted the transmission mechanism to the point where only unconventional policies could restore its functionality, as noted by Neri and Siviero (2019) and Cecioni, Ferrero and Secchi (2010).

This type of instruments can be usually summarized into:

- i. Extension of maturity on liquidity providing operations,
- ii. Asset purchases (usually large -scaled),
- iii. Low or even negative policy interest rates, and
- iv. Forward guidance.

The ECB has used all of the previously classified measures. In the context of the traditional belief that interest rates have the so-called ZLB, i.e. that their nominal value can't be located in the negative zone, the Great

Recession proved the opposite. The popular belief was that negative interest rates were virtually impossible, as in such a situation the economy would fall into a liquidity trap, with economic agents simply keeping cash. However, several central banks have implemented negative interest rates that have put an end to the theory of the existence of ZLB and replaced it with ELB (effective lower bound). The idea is that even after a certain point of negative rates, people do decide to simply hoard cash.

Forward guidance was aimed at economic agents and their expectation of future monetary stance. The central bank uses clear signals aimed at the public and they can be connected to a certain time point or simply until a certain level of growth, inflation, or employment is ensured, as explained by Dell'Ariccia, Rabanal and Sandri (2018). Forward guidance is intertwined with central banks' transparency and responsibility – categories in which the ECB is one of the best.

The unconventional measures that were implemented by the ECB can be classified into four separate periods:

- a) After the bankruptcy of Lehman Brothers, September 2008,
- b) The beginning of the sovereign debt crises, May 2010,
- c) Re-amplification of the debt crises that culminated in 2012, and
- d) Low economic growth and deflationary risks, December 2014.

### **3.1. Measures before the debt crisis – enhanced credit support**

Besides the cut down in interest rates, before the debt crises, the ECB implemented a so-called enhanced credit support program. The main point of this measure was to extend the maturity of liquidity providing operations and to enhance the credit flow through banks which couldn't be done with the standard framework, as stated by Trichet (2009). One of the key points in this support was the rising importance of LTROs (Long Term Refinancing Operations), in order to supply the banking system with liquidity for a prolonged period. While LTROs increased, MROs accounted for a smaller portion of the created liquidity in the following period. LTROs maturity was steadily increased from 3 months to 6 and 12 months in July 2009. In the upswing of the debt crises, LTROs maturity was increased to 3 years.

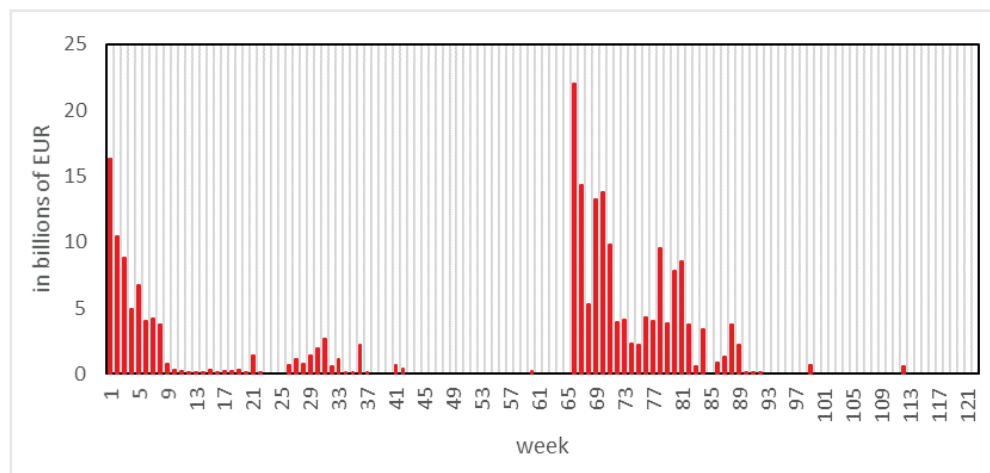
Enlarging the list of assets accepted as collateral and providing swap liquidity in foreign currencies were also one of the newly imposed measures. One of the most significant was the CBPP (Covered Bonds Purchase

Programme), which was aimed at purchasing covered bonds by the ECB to provide further liquidity to banks. The first program conducted between June 2009 and June 2010 amounted to 60 billion € (2.5% of the total market), and was followed by CBPP2 and CBPP3.

### 3.2. Unconventional measures in the sovereign debt crises

As the debt crises began, investors perceived higher risk due to impaired public finance. Consequently, long term government bond yields of the impacted members rose significantly. This led to destabilized financial markets and the transmission mechanism. The situation asked for immediate measures taken by both ECB and the national governments to protect the Eurozone. On the 10th of May 2010, the ECB announced the famous SMP (Securities Markets Programme). Its main goal is maintaining the functionality of the transmission mechanism as well as lowering liquidity risk and yields of certain government bonds. At the end of 2012, the Eurosystem's holdings of government securities amounted to 208.7 billion € with Irish, Greek, Spanish, Italian and Portuguese bonds each being 6.52%, 14.76%, 20.94%, 47.44% and 10.35% of the total amount<sup>3</sup>, respectively.

**Graph 10: SMP purchase plan, 2010-2012**

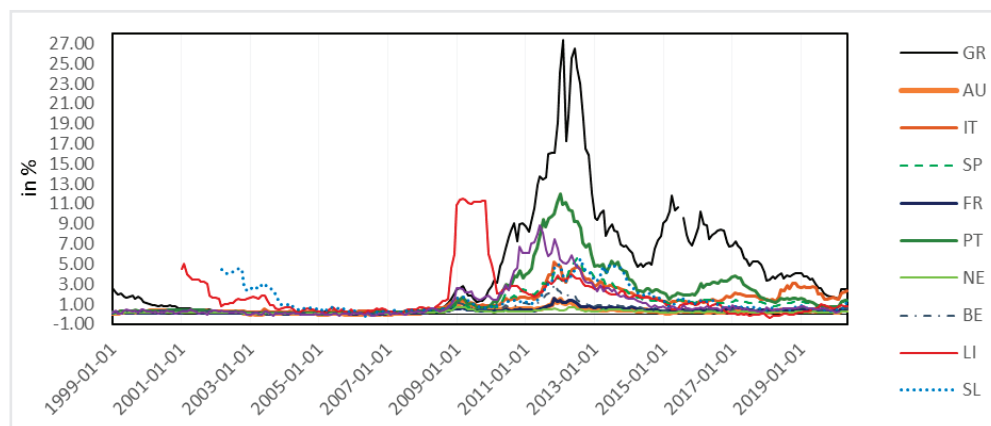


Source: ECB weekly financial statements, 10th of May 2010 – 7th of September 2012 (access date 26/07/2020); authors depiction

<sup>3</sup> ECB - Details on securities holdings acquired under the SMP, Available at [https://www.ecb.europa.eu/press/pr/date/2013/html/pr130221\\_1.en.html](https://www.ecb.europa.eu/press/pr/date/2013/html/pr130221_1.en.html) (access date 29/07/2020)

The SMP targeted government bonds with a 2-10-year maturity range in order to stabilize yields. The program lasted for 122 weeks and was conducted in two tranches before finally stopping on 6th of September 2012, when the Governing Council announced the OMT (Outright Monetary Transactions) – an instrument which intended to further lower long term yields through series of asset purchases and strict savings measures taken by the targeted members. Even though it was never used in practice, it might have had some sort of impact on lowering yields (in terms of lowering risk premiums).

**Graph 11: 10-year government bond yield spread to DE bond, selected members, 1999-2020**



Source: Federal Reserve Bank of St. Louis, Long-Term Government Bond Yields: 10-year, last update 10/07/2020 (access date 25/07/2020); authors depiction

Conducting the SMP was key to stabilizing yields. As some empirical researches note, such as Eser and Schwaab (2013), out of 1 billion € purchase of 5-year bonds through the SMP the effects were -1 to -2 b.p. (Italy), -3 b.p. (Ireland), -4 to -6 b.p. (Spain), -6 to -9 b.p. (Portugal) and -17 to -21 b.p. (Greece).

### 3.3. The period of quantitative easing (QE)

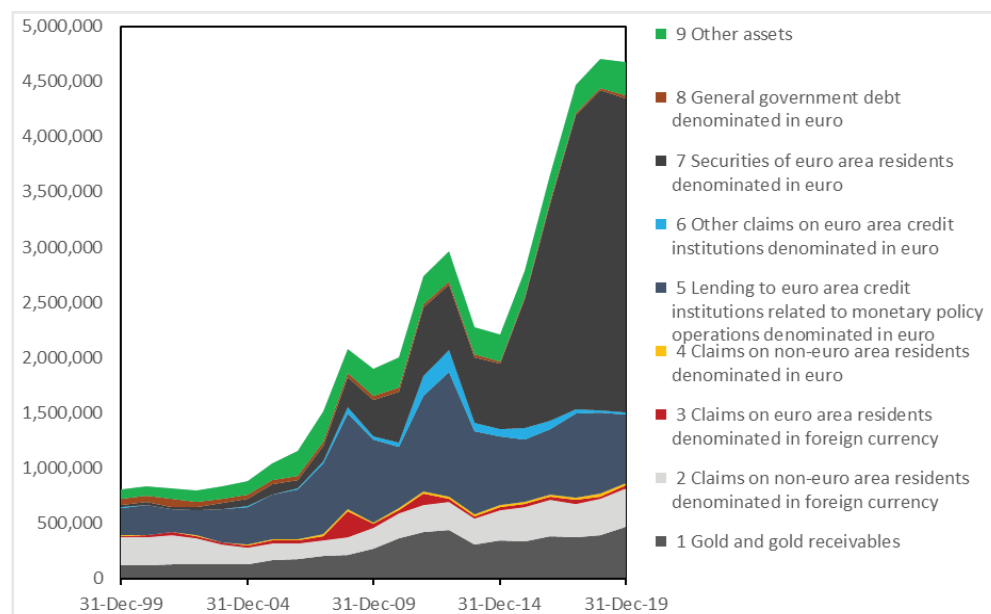
The ECB announced its newest unconventional measure on the 4th of September 2014 as a large-scale asset purchase program or commonly known as QE. This program is meant to have a large impact on the ECB's balance sheet which was focused on guiding key interest rates in the economy. The measure itself meant further yield lowering, boosting consumption and investment and improving the transmission mechanism. Furthermore, in conditions of 0% interest rates, it provides the necessary economic stimulus to fulfill the main objective

(Dell’Ariccia, Rabanal and Sandri, 2018). Carlin and Soskice (2015) note that this measure raises the prices of securities, making financing, investment and consumption increase. The APP targets four different market segments:

- a) Corporate sector purchase programme (CSPP),
- b) Public sector purchase programme (PSPP),
- c) Asset-backed securities purchase programme (ABSPP), and
- d) Third covered bond purchased programme (CBPP3).

The APP was stopped in January 2019 but was later in November restarted due to the growing global uncertainty. The monthly pace was set at 20 billion with additional 120 billion until the end of 2020 as a temporary envelope. Due to the COVID-19 pandemic, the ECB decided to provide further stimulus through PEPP (Pandemic Emergency Purchase Programme) amounting to 1.35 trillion € conducted at least until June 2021. The APP is focused mainly on public sector securities – amounting to roughly 80% of the total program, which is key to lowering government bond yields and stimulating growth since 2015. Graph 12 illustrates the size of the QE, as it’s evident that securities of EA residents denominated in EUR amounts to 61% of total assets at the end of 2019, contrary to just 17% at the end of 2009.

**Graph 12: Consolidated balance sheet of the Eurosystem (in mil. €), assets, 1999-2019**



Source: ECB - Annual consolidated balance sheet of the Eurosystem, Available at <https://www.ecb.europa.eu/pub/annual/balance/html/index.en.html> (access date 30/07/2020); authors depiction

The usage of unconventional measures to stimulate growth and push down interest rates implies that they are vital once the conventional framework is inefficient. Their re-introducing during the pandemic in 2020 by the largest central banks in the world suggests that what once was deemed as an experiment, turned out to be a powerful tool.

Friedman (2014) suggests that forward guidance might have failed in its expected impact due to the lack of empirical proof, while the asset purchases showed up to be largely accommodating to the general economy. Furthermore, he also notes that while the quantitative easing is understood as an unconventional measure it can coexist on a parallel base with the interest rate policy – slowly becoming part of the standard monetary toolkit of the central banks in the future, targeted mainly at the dysfunctional parts of the market (such as the longer-term government bond market in Europe and the mortgage lending in the US).

## **Conclusion**

Despite the popular opinion that conventional policies are enough, the past crisis showed that they are insufficient after a certain point. The usage of unconventional measures by the ECB was critical to re-stabilizing longer-term yields and regaining control over the transmission mechanism. Large-scale asset purchases played a key role along with the prior SMP in doing so, as the ECB escaped the deflationary trap and stimulated consumption and investment. Even though the unconventional measures made a significant impact, the Eurozone still hasn't returned to the pre-crisis levels – mainly due to the sovereign debt crises and the complexity and the adequacy of the monetary union (which is far less optimal than the US due to certain criteria).

The COVID-19 pandemic surely makes a massive impact on economic growth, employment and the stability of the public finances of the Eurozone's members. Restarting the QE while introducing additional PEPP is critical in maintaining longer-term yields not too divergent from the German bond as well as supplying both financial institutions and the non-financial sector with the necessary liquidity. Even though the European economies started slowly picking up after the lockdown, the forecasted -5% to -12% GDP growth in 2020 comes along with the potential fear of the second wave of the coronavirus. While the global race for efficient vaccine speeds up, countries fall into indebtedness even further – signaling that the unconventional measures are here to stay.

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