

Monetary Policy within a COVID-19 Environment: The Role of Central Banks and the Main Challenges for the Euro-zone¹

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Abstract

The last financial crisis in 2008 has weakened the Euro-zone countries. Most of them were deeply affected, and their economic growths have not returned to their pre-crisis rates. Moreover, the inflation rate is still very low despite the European Central Bank's interventions. Twelve years later, a health crisis occurred. The ECB have reacted to this event by using monetary tools. We can cite for example the famous temporary Pandemic Emergency Purchase Programme (PEPP) to save the Euro-zone countries from a systemic disaster. The current interest rate is negative, and it seems to raise some questions about the efficiency of policies and the threat to economic, monetary, and financial stability. Negative interest rate may also generate the next crisis. This paper is dedicated to recommendations based on the role of Central Banks in the health

crisis management and, more generally, environmental crisis management instead of evaluating the impacts of the monetary policies on Eurozone countries because it is too early to measure with acuity the COVID-19 effects.

Keywords: Eurozone Monetary Policy, health crisis, Central Banks, conventional and unconventional tools

JEL: E40, E52, E58, G10

1. Introduction

Since March 2020, the world was struck by an unprecedented and brutal shock. This shock was not economic or financial, but it was a health shock named COVID-19. On March 11th, the World Health Organization described this situation as a pandemic situation. All authorities have taken measures to struggle against the pandemic and to contain the evolution of the coronavirus. As the last financial crisis has weakened the economies (Jeffers and Goldman, 2020), governments do not have enough resources

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to tackle the pandemic. The virus shock has spread in the economic and financial spheres. To avoid a systemic crisis, the European Central Bank (ECB) has deployed important means based on conventional and non-conventional policies.

This paper focuses on the ongoing actions taken by the ECB since the beginning of the COVID-19 to mitigate the negative effects of the virus. The second section outlines the economic environment once the financial crisis impacts were not over. The salient conclusion is the Euro-zone economic weakness characterized by a sluggish growth and a very weak inflation rate despite the monetary (conventional and non-conventional) instruments. This point has raised the question of the monetary policy efficiency and the economic context surrounded by uncertainty (Eggertsson and Woodford, 2003; Adam and Billi, 2007; Kiley and Roberts, 2017; Lhussier et al, 2020; Goldman, 2020). With the COVID-19, growth prospects for the future continue to be uncertain. Indeed, the sanitary uncertainty has led to economic uncertainty. Moreover, the exposure degree is not the same for each economy. Therefore, and it is essential to understand the ins and outs of the current crisis and underline the negative repercussions on the European countries before launching any short-term and structural reforms. The third section starts by a brief history of the role of the Central Banks since their creation. The principal conclusion is that the Central Banks have optimally managed the crisis and respond efficiently to the environmental requirements. For the pandemic crisis, the ECB has defined the temporary Pandemic Emergency Purchase Programme to support the European economies. It has also proposed to banks

the possibility to provide more liquidity to economic agents and guarantee the liquidity.

It is too early to evaluate the actions of the Central Banks and their impacts based on the main macro-economic indicators. However, some recommendations for the future Central Banks policies are available. The last section draws conclusions.

2. The Euro-zone economic environment in the midst of the coronavirus: State taking, outlook and challenges

The aim of this section is twofold. Firstly, before analyzing the impacts of the health crisis, it compares the coronavirus crisis to the recent financial crisis. This point is essential to understanding the nature of the current crisis. Secondly, the section presents some interesting macroeconomic indicators to evaluate some potential consequences of the coronavirus and it provides previsions of the economic growth.

Coronavirus State Taking and Economic Outlook

There are some similarities and differences between the last financial crisis and the coronavirus crisis. The similarities lay on the traditional process of a financial crisis such as shortages of liquidity, bankruptcies, important losses, and therefore a potential threat of financial stability (Reinders et al. 2020)². This last point is one of the main concerns of the Central Banks and supervisors since the famous 2008 crisis (FSB, July 2020)³. The FSB report has underlined the financial system's resilience thanks to the measures taken after the last financial crisis. It also deals with the fundamental uncertainty. The first concepts of fundamental uncertainty were thoroughly analyzed by Keynes (1937)

² <https://voxeu.org/article/covid-19-threat-financial-stability-europe>

³ <https://www.fsb.org/wp-content/uploads/P150720-2.pdf>

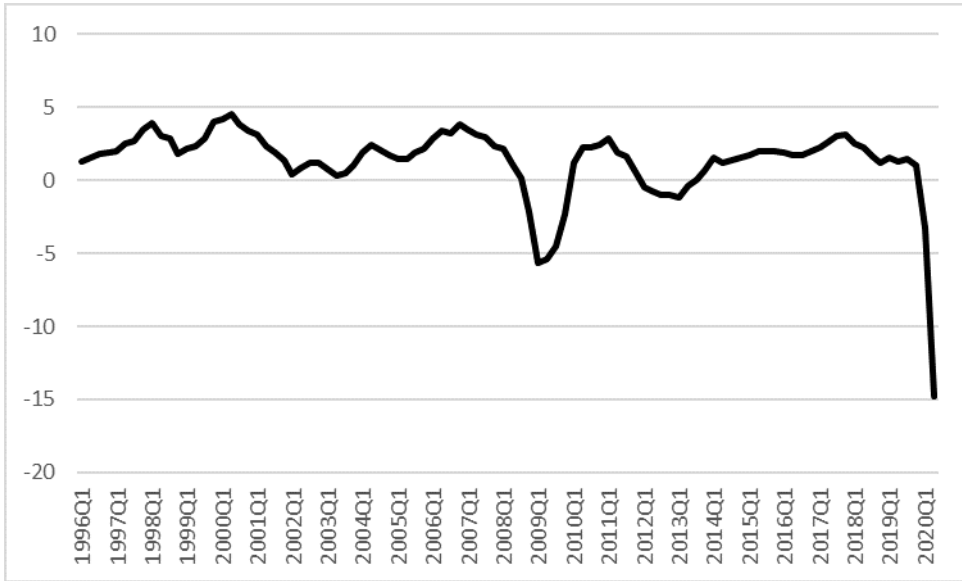
and Knight (1921). There is a difference between this concept and the risk. For risks, the forecasts are feasible, and they provide fruitful information on the consequences of the regulators' actions or decisions. The fundamental uncertainty is more complex and impossible to capture. Therefore, there is no place for prevision. Nowadays, economies plunged into a new environment where the "unknown unknowns" theory (Logan 2009)⁴ is omnipresent. A U-theory (Scharmer 2016; Scharmer and Kaufer 2018) may be useful in contributing to solving the issue of environmental finance. Concisely, the U-theory enables the possibility to find the best solution for a group or an organization. All agents have to participate actively in the project. There is no leader to impose solutions or discussions. The interactions between agents create common solutions thanks to an interactive process. The solution prototypes are evolving and can therefore be continuously improved by all participants. The U-theory is a method that considers the uncertainty as new possibilities reservoirs to solve thorny and theoretically unsolvable questions. Climate change creates risks, and its solutions bring opportunities. We should act in a timely manner; propose fiscal and monetary stimulus packages to boost resources and sustainable growth; to prevent risks and utilize opportunities etc. All environment actors have to adapt optimally to this new paradigm. Accordingly, economic

policies, in response to the environmental emergency, need to match this specific environment, posing a challenge to both economists and decision makers. Another similarity is the response from the regulators to resolve this crisis. For instance, the ECB has reacted rapidly to this negative exogenous shock and implemented appropriate monetary measures. Most of them were defined for the last financial crisis. According to Baldwin and Weder di Mauro e-Book in 2020⁵, it is necessary to react quickly and use all policy tools (fiscal, monetary, industrial, social insurance etc.). National and international policies are the COVID-19 solutions, however, they should be coordinated and implemented optimally. The coronavirus has negative simultaneous effects on several activity sectors, which is not the case of the traditional financial crisis. Unlike the financial crisis in 2008, the coronavirus is a pure exogenous crisis. This latter appeared like a meteorite and has devastated the whole economy. All activity sectors were brutally affected. There was a sharp decrease in GDP (Chart-1), an increase of unemployment (Chart-2), a threat on the financial stability, and a potential occurrence of systemic risk (Charts 3-5). Indeed, the systemic risk probability was at its highest value during March-April 2020. Thanks to European adjustment policies, the probability has decreased, but not to its pre-crisis level in 2020.

⁴ In February 2002, Donald Rumsfeld, the then US Secretary of State for Defense, stated at a Defense Department briefing: 'There are known knowns. There are things we know that we know. There are known unknowns. That is to say, there are things that we now know we don't know. But there are also unknown unknowns. There are things we do not know we don't know'. (Logan (2009), p. 1)

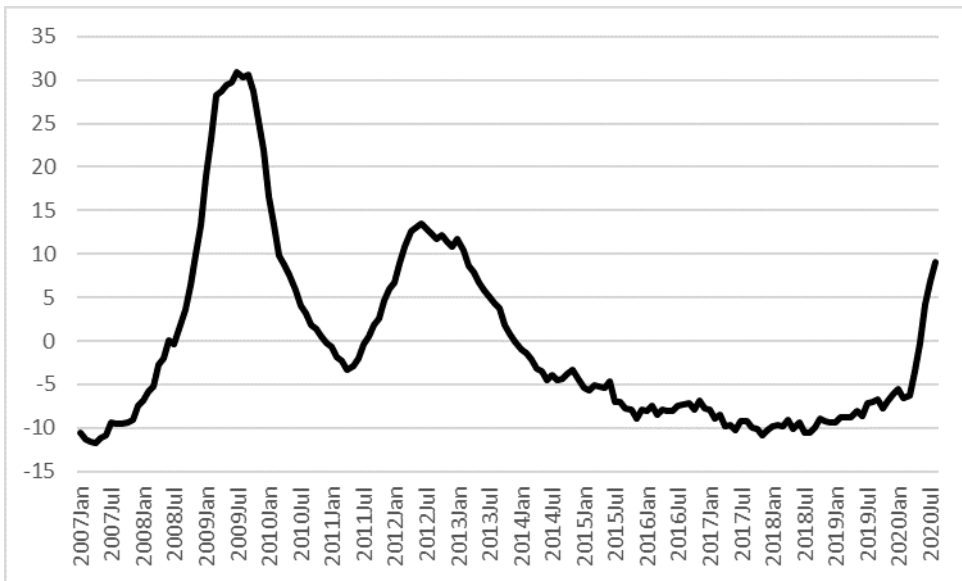
⁵ "Mitigating the COVID, Economic Crisis: Act Fast and Do Whatever It Takes", Edited by Richard Baldwin and Beatrice Weder di Mauro, A CEPR Press VoxEU.org eBook.

Chart-1: Real GDP Growth Rate for the Euro Zone from 1996Q1 to 2020Q2(%)



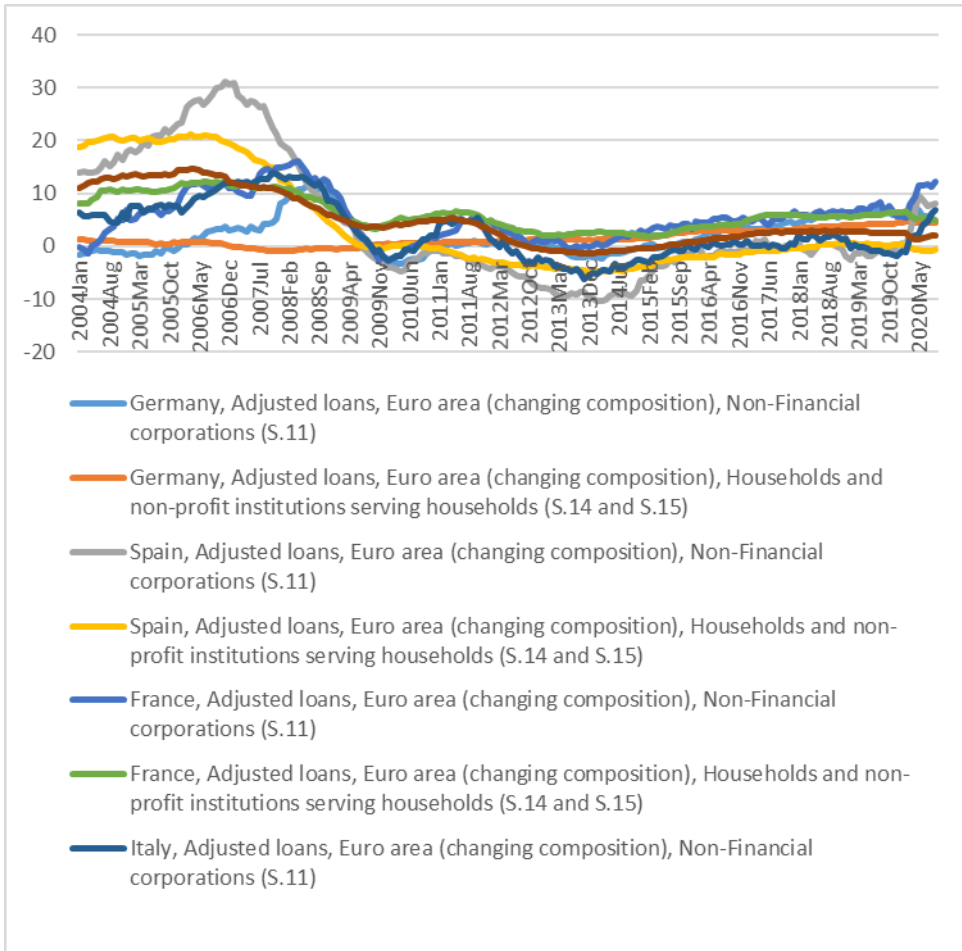
Source: ECB-SDW

Chart-2: Unemployment Rate for the Euro Zone from 2007M01 to 2020M09 (Annual growth rate, %)



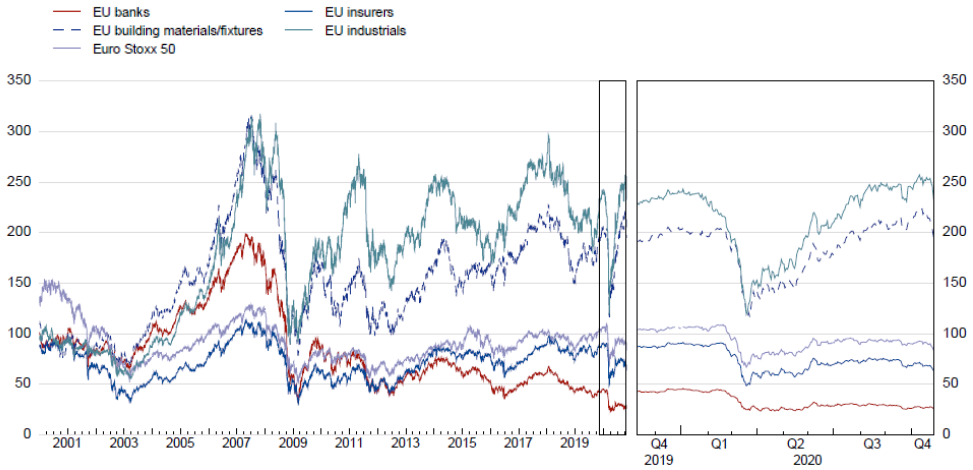
Source: ECB-SDW

Chart-3: Non-financial Corporations (S11) and Household and Non-profit Institutions Serving Households (S14 and S15) Credits Annual Growth Rates since 2004M01 to 2020M09 (Socks, %)



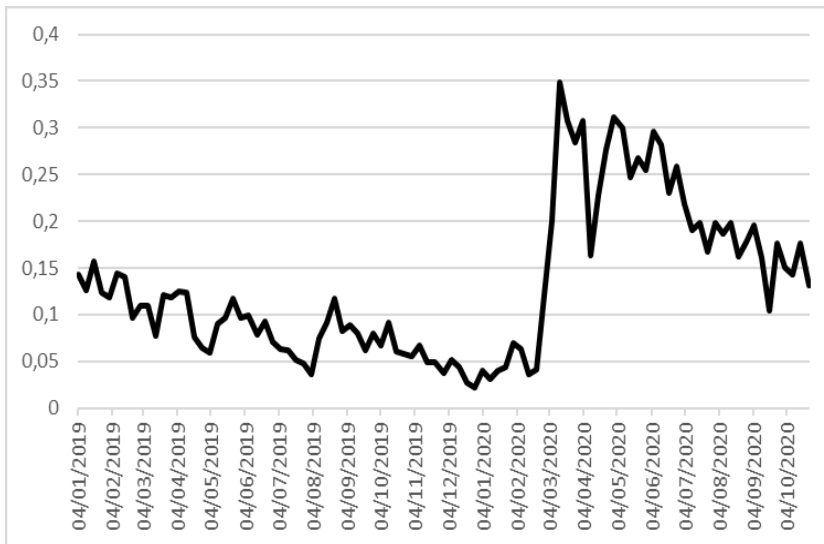
Source: ECB-SDW

Chart-4: Equity Indices by Sector (EU, index: 4 Jan. 1999 = 100; last observation: 28 Oct. 2020)



Sources: Bloomberg Finance L.P. (Euro Stoxx 50) and Refinitiv (others).

Chart-5: Daily Systemic Risk Indicator from 01/01/2019 to 10/28/2020 (probability)



Source: ECB-SDW

The inflation rate is still very low, and the growth is sluggish despite the monetary conventional and unconventional policies implemented since 2015 (Jeffers and Goldman, 2020).

The sanitary crisis also underlined the weakness of the health sector and their

medical means shortages (masks, rubbing alcohol/sanitizer, etc.). This situation is likely a result of decades of reduction in public health budget.

The first EU emergency measures have aimed at preventing a collapse in the economic sector. This collapse would have

severe negative impacts on the financial sphere. It is for that reason that the focus of these measures is to support the real economy through financial lending. Most firms have used bank lending to continue their production activities. They have also received subsidies from the government. Some firms are already qualified as zombie firms since they are not financially strong enough to reimburse their debts. To survive, they have to borrow more money, which is

not a healthy situation. The “zombification” of those firms is not a new phenomenon, but the health crisis has strengthened it. This trend is concerning at term since it could be one of the determinants of the next crisis.

The next paragraph is dedicated to illustrating the difficulty in providing forecasts because of the uncertainty. We first present the ECB forecasting exercises for the GDP, then the IMF projections.

Chart-6: GDP for the Euro Zone from 2013 to 2022

(quarter-on-quarter percentage changes, seasonally and working day-adjusted quarterly data)



Source: ECB projections

According to the ECB projections after a great real GDP contraction in 2020 (-11.8%⁷), the GDP growth rate will evolve around +8.4% in 2021 and stabilize at about +3% in 2022. The October 2020 IMF report also makes precise the annual growth rates of the real GDP. For the periods of 2020 and 2021, it is respectively about -8.3% and +5.8%⁸. The IMF projections are quite different from those of ECB, such a value

divergence demonstrates how difficult it is to provide reliable estimations. The estimations results diverge because of the level of uncertainty. However, the common point between the IMF and ECB analysis is that both organizations have displayed a V shape crisis. Most of the time, this shape is the best scenario for a crisis. Nevertheless, this conclusion seems to be cursory since the current crisis is not over.

⁶ <https://www.bloomberg.com/news/articles/2020-03-06/europe-s-zombie-borrowers-besieged-by-spread-of-coronavirus>

⁷ Eurostat

⁸ <https://www.imf.org/en/Publications/WEO/Issues/2020/09/30/world-economic-outlook-october-2020>

Challenges

Given the new nature of the current crisis, it is obvious that different challenges emerge. This sub-section does not deal with all challenges but only two crucial ones. However, the most important challenge is to guarantee the economic and financial stability. For decades, it is well established that financial development is the cornerstone of economic growth. Indeed, through the theoretical literature, three research axes have emerged. The earlier works have emphasized the positive impacts of financial development on economic growth (Bagehot, 1873; Schumpeter, 1912; Goldsmith, 1969; McKinnon, 1973; Shaw, 1973). According to Schumpeter (1912), innovations (including financial progress) are the engine of growth. Soon, the direction of causality finance and growth has become a priority of research. Some authors like Robinson (1952) have demonstrated that there is no financial development without economic growth. This second research axis describes an early development of societies where the economic growth has led to financial development. The third axis of research reverses the causality and underlines the financial development and economic growth causality sense. These two axes are not contradictory since the finance growth nexus is not linear. There are thresholds. A recent empirical study (Zhu et al. 2020)⁹ has showed that the higher the financial development level, the lower the economic growth due to the lack of innovation. According to the same study, the financial development threshold is about 60% of the GDP. Despite the interesting conclusion of this work, a main limitation appears. It is very surprising that they have found only one threshold. These authors use a dynamic panel threshold model and impose only one threshold to their specification. This is not suitable for this kind

of topics. It is obvious that the finance-growth interlinkage is more complex, and the level of financial development is quite difficult to measure since there are both quantitative and qualitative factors.

The previous paragraph indicates clearly that the link between growth and finance is not obvious. Therefore, to guarantee the economic and financial stability is a difficult goal to reach. The challenge is to evaluate correctly the consequences of the COVID-19 crisis in order to propose an optimal remedy to the COVID-19.

Moreover, since the onset of the COVID-19 crisis, several actions have been launched. Indeed, there are the temporary and targeted discretionary fiscal stimuli. These fiscal stimuli tend to support the production sphere. The most relevant examples are the deferred tax payments that represent about 16% of EU GDP on March 16 according to the report of the European Council¹⁰. The budget policy has been used to support the economic growth. These budget policies have required a kind of flexibility of the EU criteria. According to the Maastricht Treaty published in 1992, the public deficit should not exceed 3% of the GDP, and budget expenses should not exceed 60% of the GDP. These fixed accounting rules were difficult to reach for most of European countries. With the health crisis, the challenge would be to rethink these criteria and propose a more flexible framework to the EU countries. The flexibility should be permanent and not temporary since an increase in the budget expenses is not always a synonym of a bad management. A mentality change is required in this field. The sanitary crisis has also shed light on the health sector difficulties to provide qualitative services to the public. This situation is likely related to the austerity policies, run for years, imposed on those countries to converge towards the budget targets. The situation of

⁹ Financial development and innovation-led growth: Is too much finance better? (<https://doi.org/10.1016/j.jimonfin.2019.102083>)

¹⁰ <https://www.consilium.europa.eu/fr/press/press-releases/2020/04/09/report-on-the-comprehensive-economic-policy-response-to-the-covid-19-pandemic/pdf>

some key sectors such as health or education should be considered as signals to activate public expenses policies. Moreover, for years the interest rates are too negative to permit a sustainable growth. According to Mario Draghi, ex-ECB governor, the negative interest rate should give EU countries the opportunities to start their structural reforms without resorting to austerity policies¹¹. Additionally, it is clear that the EU community needs a budget union to achieve its maturity. A genuine European fiscal and budgetary union would strengthen Europe's place at the global level, as well as the implementation of European aids in the event of crises and a better assessment of their effectiveness. In regard to the pandemic, a fiscal union would not have allowed Italy to be left to its fate when it was the epicenter of this coronavirus crisis.

Several initiatives have emerged from different EU institutions to tackle the negative effects of the last crisis. For instance, the EU Commission proposes to use the EU budget resources optimally, and "a Coronavirus Response Investment Initiative was approved by the European Parliament and the Council and is in force as of the 1st of April." The European Investment Bank (EIB) has proposed a Pan-European Guarantee Fund of 25 billion Euro to participate actively in the sanitary crisis. (Source: Report on the comprehensive economic policy response to the COVID-19 pandemic, 04/09/2020). These European initiatives indicate the commitment and the upsurge of solidarity for all economic parties involved.

Lastly, the monetary policy has also been used to protect nations against an economic and social disaster. Several measures have been applied among the most impressive ones, and we can cite the amount dedicated to the PEPP. This point will be elaborated in the next section, which discusses the role of Central Banks.

All these actions should be coordinated to respond optimally to this exogenous sanitary shock. The next challenge should be the creation of a supra EU institution, assumed to collect all information about how different policies run, to ensure the financial stability and economic growth. This new structure would guarantee the coherence of those policies.

Despite different initiatives of EU institutions, most of the challenges could be overcome by Central Banks. The next section demonstrates why the Central Banks are the most capable at resolving these challenges.

3. The historical evolution of the Central Banks' roles and the Pandemic situation: What should we expect from Central Banks?

The Central Banks' role has grown over the years. Today, with the climate change and the COVID-19 apparition, they will likely tailor their policies to promote a sustainable finance and *in fine* boost the growth. On a regular basis, the president of ECB, Christine Lagarde promotes the ideas aiming at supporting the financial development and protecting the economic environment against the negative impacts of the COVID-19.

The aim of this section is to answer the two following issues. Why should the Central Banks be an active participant to the rescue of economies, victims of exogenous (or endogenous) shocks? How should they act? For the first question, the history of Central Banks brings some elements of responses. The answers of the second question are not straightforward. For centuries, they have furnished a range of tools to contain financial crises. However, the Central Banks cannot struggle against the negative consequences of COVID-19 alone. A coordinated action is required to bring timely optimal solutions.

¹¹ <https://blog.supplysideliberal.com/post/132388157242/mario-draghi-on-negative-interest-rates-and-other>

Central Banks’ History: from the Middle Ages to Now

To understand the role of Central Banks in sustainable finance management, we propose to present the Central Banks’ history. Since their foundation, the Central Banks have expressed concerns regarding the money in circulation. The word “Central Bank” appeared in the second half of the 19th century to qualify the Bank of England (Ugolini, 2017),

but before that, some interesting central institution schemes emerged. They have likely outlined the current Central Banks functions and missions.

Ugolini (2017) describes Central Banks as an extension of the government policies focused on financial and monetary stability. He has proposed a brief historical grid of Central Banks in Europe. Table-1 summarizes the history of Central Banks in Europe from the Middle Ages to the present day.

Table-1: History of Central Banks in Europe

Periods	Centralized and decentralized areas	Missions
Middle Ages to Napoleonic Wars	City States: Venice; Amsterdam and Hamburg; Barcelona and Genoa.	At this time, commercial transactions were very important and the merchant republics powerful. The aim of the monetary authorities was to guarantee the equilibrium of the balance sheet. Assets have to cover the liabilities. When there were imbalances, they used inflationary tools such as the public debt monetization. This last point explained why monetary policies were the fact of government and/or public banks. The several centralized organizations had some similarities but also differences.
	Venice	The embryonic central banking activities started in the late-medieval Venice. As a dynamic commercial area, the Venetian authorities developed diverse payment tools to increase the monetization degree. The most important concerns were potential monetary disruptions. In 1282, The Grain Office (<i>Camera del Frumento</i>) centralized an important share of financial operations. In the mid-14 th C. non-performing loans skyrocketed. During the 14 th to the 16 th centuries, there were financial turbulences. Authorities were compelled to create a public bank to jugulate the crisis. In 1587, <i>Banco della Piazza di Rialto</i> , a public bank appeared. In 1638, <i>Banco del Giro</i> replaced the former public bank until the Napoleon wars.
	Amsterdam and Hamburg	These two cities were relatively similar. Indeed, they witnessed a monetary debasement period during the 16 th and the 17 th periods. In 1609, the <i>Wisselbank</i> was born to regulate the crisis by replacing the “bad-quality” coins by the good-quality ones. Later, this public bank started to behave as an international monetary actor and as an indirect lender of last resort. Founded in 1619, the <i>Hamburger Bank</i> (HB) actively participated in restoring financial stability and proposing ingots. This bank was also a leader in the silver commodities market. In 1793, the HB behaved as a lender of last resort after the crisis.
	Barcelona	Barcelona is the area where the first assimilated-central bank emerged. In 1401, a Bank of the municipality named <i>Taula de Canvi</i> was born to guarantee the domestic payment system. <i>Soon Taula de Canvi</i> refused to open current account to bankers because of their recurrent insolvability and the silver rarefication. Then, its main role was to be the municipal treasurer of the Crown of Aragon territories.
	Genoa	Since the 14 th century, Genoa Republic faced to crisis. The public debts were heavy and the government decided to externalize their management. The <i>Casa di San Giorgio</i> institution was born to deal with the public debts concerns. In 1815, this private bank vanished after the Sardinian Kingdom’s invasion.

Early Modern Period	Centralized geographical policies: Naples, Austria and Sweden; England; France ¹² .	During the early modern period, there is a centralization process most of the time because of the warfare burdens. From the 14 th to the 17 th centuries there were financial crises and the interest of borrowers and lenders were not always guaranteed. Later there were national projects to manage the money circulation. Within a revolutionary context, countries started to establish their own Central Banks and define in details their missions.
	Naples, Austria and Sweden	Since the 16 th C. national central bank schemes flourished. In 1808, <i>Banco Delle Due Sicilie</i> emerged. In 1705, the <i>Wiener Stadtbanco</i> was born but replaced by <i>Oesterrischische</i> National bank in 1816. Finally, in 1668, the Riksbank appeared succeeding to <i>Stockholm's Banco</i> , founded in 1657. All these Central Banks contributed to the financial and monetary stability by using policy tools.
	England	In 1694, the Bank of England (BoE) appeared to finance the economy during the famous instability in the 17 th century. This institution was established for a temporary period (eleven years). Its main mission was to write redeemable banknotes (liabilities side) and report the long-term debts (assets side). In 1717, the BoE used gold as a stabilization tool. Soon the BoE became an active policy actor by managing the money circulation, the payment and credit systems, and the public debts. In 1844, legal texts defined the missions of the bank (Act of 1844). All these missions are those of our current Central Banks.
	France	In 1800, the consul Bonaparte created the " <i>Banque de France</i> " (BdF). He expected that this new bank would support the government expenses, especially the military budget. The BdF was also established to throttle inflation (Bordo and Siklos, 2018; Ugolini, 2017). Later, the BdF became the largest European network and an important actor of supervision. Besides, it is a lender of last resort.
Modern Period	Decentralized geographical policies: European Central Banks	In 1998, the European central bank was born within a supranational union framework. The principal missions of the ECB are legally defined (Art.127 §1) ¹³ . Since the last financial crisis, the ECB has introduced in its mission the financial stability.

Sources: Table-1- based on Ugolini's works (2017)

History has shown that the emergence of Central Banks in Europe is related to some form of monetary turmoil, particularly related to the liquidity risks. The financial crises have urged Central Banks to take up the role as the lender of the last resort.

COVID-19 Tools and Recommendations

Central Banks have rescued economies at each negative event regardless of the

crisis nature. This salient characteristic is permanent since the ECB did not hesitate to use monetary instrument to protect economies from economic, financial, and social disasters during the current pandemic situation. The following table resumes the different waves of ECB actions during the pandemic period.

¹² The list of Central Banks is not exhaustive.

¹³ <https://www.ecb.europa.eu/ecb/legal/1341/1342/html/index.en.html>

Table-2: ECB Actions since the COVID-19 Occurrence

	March 2020	April 2020	June 2020	July & August 2020
Asset purchases	<p>APP (Asset Purchases Programme) expanded temporarily</p> <ul style="list-style-type: none"> - additional €120 billion in 2020, while continuing ongoing monthly purchases of €20 billion and reinvestments - NFC commercial paper made eligible 			
	<p>PEPP (Pandemic Emergency Purchase Programme) launched</p> <ul style="list-style-type: none"> - €750 billion envelope until at least December 2020 - flexible allocation across time, assets, countries - wider eligibility than APP 		<p>PEPP expanded</p> <ul style="list-style-type: none"> - increase by €600 billion to €1,350 billion and extension by six months until at least June 2021 - reinvestments at least until end of 2022 	
Lending programmes*	<p>TLTRO (Targeted Longer-Term Refinancing Operations) III conditions eased</p> <ul style="list-style-type: none"> - borrowing rate -25 to -75 bps (June 2020 to June 2021), depending on lending performance - borrowing allowances raised; etc. 	<p>TLTRO III conditions eased further</p> <ul style="list-style-type: none"> - borrowing rate -50 to -100 bps (June 2020 to June 2021), depending on lending performance - further easing of terms and conditions 		
	<p>Additional LTROs</p> <ul style="list-style-type: none"> - facilitating switch into TLTRO III 	<p>PELTROs (Pandemic Emergency Longer-Term Refinancing Operations) introduced</p> <ul style="list-style-type: none"> - interest rate of -25 bps - seven operations from May 2020, maturing by September 2021 		
			<p>Collateral requirements eased temporarily</p> <ul style="list-style-type: none"> - reduction of collateral valuation haircuts - mitigation of impact of potential rating changes - wider eligibility of credit claims - eligibility of Greek sovereign debt instruments 	

	March 2020	April 2020	June 2020	July & August 2020
Swap/repo lines	EUR swap lines reactivated - with the central bank of Denmark	EUR swap lines set up - with central banks of Croatia and Bulgaria	EUREP repo facility and EUR repo line set up - new Eurosystem repo facility to provide euro liquidity to non-euro area central banks (EUREP)	EUR repo lines set up - with central banks of Albania, Hungary, Serbia, Republic of North Macedonia and San Marino
	USD swap lines reactivated - with Federal Reserve and other major central banks, USD provision through liquidity swap line - daily seven-day and weekly 84-day operations		Frequency of 7-day USD operations reduced - to three per week	Frequency of 7-day USD operations reduced - to one per week as of 1 September
Supervisory measures	Temporary capital, liquidity and operational relief - facilitating use of capital and liquidity buffers - flexible prudential treatment of loans backed by public support measures and mitigation of procyclicality in accounting - recommendation against dividend payments	Temporary reduction in capital requirements for market risk		Further guidance - guidance against dividend payments and for moderation in remuneration - clarification on restoration of capital/liquidity buffers and supervisory expectations on addressing debtor stress

Notes: *The interest rates on the lending programmes are linked to the key ECB interest rates. The lending performance for the temporary rate reduction of TLTROs is targeted towards the pandemic period. The ECB reconfirmed its forward guidance on the path of policy interest rates and the APP throughout this period.

Source: ECB staff¹⁴

The table above displays that the ECB supports actively and gradually the European countries to avoid a systemic crisis and then guarantee the monetary and financial stability and *in fine* the economic growth. It is too early to evaluate the quantitative or qualitative impacts of this kind of exogenous or endogenous shocks. Given their history and their crisis management knowledge, Central Banks have the required resources to optimally solve financial and economic

disruptions. Sooner or later, they should expand their missions to directly help nations to cope with socio-economic difficulties.

All these Central Bank measures cannot be the only ones to resolve the current crisis. Other European and national organizations should participate actively in the “wartime effort”. Additionally, the private sector should be invited (or mandated) to find solutions to the economy when they are responsible. Besides, an acceleration of the Budget

¹⁴ Table-2 retrieved from: <https://www.ecb.europa.eu/press/key/date/2020/html/ecb.sp201006~e1d38a1ccc.en.html>

Union is suitable to fight efficiently against the future crisis. A mentality change is also necessary. Indeed, for years the EU has used the Maastricht criteria to which it has stuck without any reconsideration. Since 1993 the EU countries no longer try to adapt the criteria to the economic context. They are considered as irrational postulates. It is time to reconsider them and be more flexible. For decades, public expenses are perceived as a bad management despite the empirical and theoretical literature on this topic. There is a positive link between the economic growth and the public expenses (Barro, 1991; De Avila and Strauch, 2003; Barrios and Schachter, 2008).

In addition, for decades the EU has taken into account unique criteria despite the specificity of countries. This point should be reviewed to increase the international role of Europe or the Euro to reinforce its influence in the world.

Conclusion

The COVID-19 crisis has unprecedented repercussions on several main economic indicators, such as the GDP and unemployment. Without the intervention of the European Central Bank, all European economies would have collapsed according to some economic indicators' trajectories. The economic crisis is more violent than a financial crisis as we have witnessed during this pandemic period. However, this period reveals some interesting challenges. One of the most important challenges is the "new" role of the Central Banks. They have successfully adopted economic measures to deal with the sanitary crisis. The PEPP is not a new tool since the Central Banks have already used it (i.e., private and public debt purchases) during the last financial crisis. The novelty is in its size. Indeed, the amounts of the PEPP are outstanding. It is obvious that

the Central Banks will support economies until the crisis spectrum disappears.

However, since the crisis in 2008, the interest rate starts declining, and the current value is negative. This situation is theoretically odd. The indebtedness trend is increasing, and a kind of "zombification" of the economy emerges. These trajectories lead to the following questions: Can we exit the territory of negative interest rate? What will the immediate and medium/long term consequences be?

The global pandemic has not only challenged the economic sphere, but the coronavirus shock has also shed light on structural inequalities. We observe amongst countries inequalities. There are plenty of inadequate health systems, social protection differences (liberal or social), and environmental degradation etc. These trends represent a real threat to democracy. Today, the crisis may be an opportunity to go further and think differently about society priorities. For instance, it may be an opportunity to rethink the concept of productivity. Can we produce without damaging the planet? What do we mean by green production?

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