Constitutional Political Economy
https://doi.org/10.1007/s10602-024-09441-4

ORIGINAL PAPER

From one crisis to another: the European central bank's role from the great recession to the Ukraine war

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Accepted: 11 May 2024
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Abstract
The paper examines the changing role of the European Central Bank over the last 15 years and holds that the ECB has gone through a process of learning by doing, relying on earlier crisis experiences in forming its response to successive crises. This learning process has enabled it to sustain the euro countries against various exogenous shocks both within the power of its mandate and beyond it, implementing novel reforms. We argue, in fact, that crises stimulated institutional innovations such as the introduction of Eurozone banking supervision and the European Banking Union. The latter was a particularly ground-breaking idea, not contemplated by the Treaties, and addressed to exceptional endogenous dynamics. During the last two emergencies, triggered by the pandemic and the war, the ECB seems finally to have learned how to manage crises via a synergic use of available tools.

Keywords ECB · Monetary policy · Banking supervision · Crisis management · Learning by doing

JEL Classification N24 · G15 · F36 · F55

1 Introduction

We hold that the European Central Bank (ECB), founded recently (in 1998) and currently the Central Bank of 20 EU member states that have the euro as their official currency, has gone through a process of learning by doing. Not unlike the operator of a machine who becomes more proficient with experience (Arrow, 1962; Solow,

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Published online: 31 May 2024

1997), central bankers' skills are a product of experience and harsh times—which, by the way, was also the case for the Bank of Italy in 1893 and the Fed in 1929.[1] They all learned through adversity and relied on earlier crisis experiences in forming their response to successive crises (Quaglia & Verdun, 2022).[2] The EU itself also learned through experience, and its reforms were often a response to crises so as to create a (more) durable governance framework (in this case, as Begg shows, fiscal rules reforms might not have gone far enough to underpin the sustainability and resilience of the euro area).[3]

Our research focuses on the ECB and we believe that crises were a stimulus to institutional innovations for this EU institution. Even though the global financial crisis, the sovereign debt crisis and recently the economic consequences of the pandemic and the Russian invasion of Ukraine, led to many changes and strengthened different EU actors, not all European institutions performed such an important role and endorsed such innovative long-term influence reforms (Bauer & Becker, 2014; Fabbrini, 2013; Hodson, 2013; Jones et al., 2016; Smeets et al., 2019). If we look at institutional change as an evolutionary process, theories suggest that such change is due to human actions, such as learning (Coccia, 2018). The process of institutional change is thus path-dependent because individuals learn, and organizations develop in the context of a particular set of formal and informal rules (North, 1990). Roland (2004) suggests an analogy between institutional change and tectonic pressure along fault but slow-moving lines that, however, can suddenly provoke an "earthquake". We hold that crisis, in our case, can be compared to earthquakes that cause unforeseen but substantial institutional changes. While the non-standard monetary measures were part of the Maastricht Treaty, the Banking Union was an innovative idea, not contemplated by the Treaties, which responded to ground-breaking endogenous dynamics to change the state of the art.[4]

If the ECB foremost mandate is undoubtedly the safeguarding of price stability, its learning process has enabled it to sustain the euro countries against various exogenous shocks both within the power of its mandate and beyond it, following a new path of reforms which strengthened its role and the euro countries' economic

[1] In the Italian case, Vera Zamagni convincedly argues that the difficult contingencies and power vacuum which accompanied the birth of the Bank of Italy (1893) paralyzed its intervention to prevent the two largest investment banks' bankruptcy. The Bank of Italy only gradually learnt to play its role as Italy's first lander of last resort for the banking and industrial sector (Zamagni, 2003). In the case of the US, according to experts (Friedman and Schwartz, 1963; Meltzer 2003) the 1929 monetary collapse was not inescapable, but deep structural flaws and incompetence prevented the FED to follow through with the appropriate policies—monetary policy was inept and unprepared. It finally took central reforms of the FED and the entire financial system (the Banking Acts of 1932 and successive laws) to definitively turn the Federal Reserve into a modern and independent central bank. Such learning process has enabled Bernanke to state confidently that: "we won't do it again.".

[2] In the words of Jean Monnet "Europe will be forged in crises and will be the sum of the solutions adopted for those crises" (Buti, 2023).

[3] According to Begg (2017 and 2023) the future of EU fiscal rules remains the key and the EU needs to take decisive action to face the need for and likely nature of a supranational fiscal capacity, and the consequences of economic divergence among euro area members.

[4] According to Verdun institutional rules are not unchangeable, especially when they are the outcome of a "mediated settlement" and not of undeniable theory" (Verdun 2023, p. 44).

cohesion. Since October 2008, the Governing Council of the ECB has launched numerous non-standard monetary policy measures, refinancing operations, long-term credits for commercial banks in the euro area and monetary easing to support banks and countries in dire straits. If the support to sovereign-debt crisis countries may not have been immediate, the Bank learned from its mistakes and in 2012 the ECB went as far as taking a political stance (with the famous "whatever it takes" speech by Mario Draghi) that undoubtedly worked, halting speculation, and reining in the costs incurred by governments for servicing their countries' public debt. That same year the ECB also became a champion of institutional change being involved in the European Banking Union—the biggest integration and revolutionary project after the single currency. As a result of these developments, a path of economic growth was resumed in most of the euro area countries, deflation was averted, and the new banking regulations effectively made the system more transparent and stable.[5] The ECB learned through experience how important it is to quickly respond to crisis with ad hoc measures.

The outbreak of the Covid19 pandemic did not catch the ECB unprepared and its support rapidly intensified by adopting bold and unprecedented forms of financial stabilization with the introduction of the Pandemic Emergency Purchase Programme (PEPP) (Cornel, 2021). When the European economy and banking sector was well on the way to recovering from the pandemic, the Russian invasion of Ukraine, in February 2022, was the root-cause of another important exogenous shock. The ECB stood ready to take whatever action was needed and its role soon went well beyond price and financial stability, being involved from the beginning in the operations of financial sanctioning against Russia. According to some authors this commitment has led to a weaponization of central banking, a new role unequivocally endorsing geo-political objectives too (Quaglia & Verdun, 2023b).

Through a slow and progressive learning by doing process and a continuous assumption of responsibility within the European system, the European Central Bank has become an effective crisis manager. We argue that the ECB's response to crises improved over time thanks to a process of learning and accumulating fruitful experience from previous crises. We would also like to contribute to the massive scholarly work on the ECB by pinpointing the revolutionary, unforeseen and innovating institutional changes brought about by the Banking Union. If the institutional

[5] We are well aware of the criticism surrounding the working of the ECB and its role in the economic governance of the EU, its (unwelcome) political bearing, (excessive) independence and democratic legitimacy. In particular, the democratic deficit of the ECB was recognised even before the birth of the ECB by the pioneering paper of Gormley and de Haan, 1996. Then among political scientists and jurists' critical evaluations see: Elgie, 2002: p. 193; Curtin, 2017 pp. 28–44; Heidebrecht & Kaeding, 2018, pp. 1–13; Mabbet & Schelkle, 2019; Tuori, 2019; Diessner, 2023; Chang, 2023. In particular while Richter (2017, pp. 267–79) argues that "the doctrine of the economic advantages of central bank independence cannot be uncritically transferred to the European Central Bank (ECB) since it is the State, not its central bank, who bears the ultimate responsibility for the purchasing power of its paper money", Smith and Weeks (2018) take an opposite stand. Last but not the least, if it is true that the objective of creating a true banking union, e.g. a single market for banking products and services, remains unachieved, specific legislative amendments are needed to pursue this direction (Angeloni, 2024). We do not want to fuel the argument; we can only reiterate that the ECB has always operated in compliance within the (old and new) limits and rules of its mandate.

architecture of the euro area has been truly moving to a further deepening of the EU over the last few years, the ECB is one of its major actors (Verdun, 2018). Last but not least, faced with a dangerous resurgence of Euro-scepticism, revealed in different events and upheld by different political groups, both in the most recent EU member states and among the very founding members (including Italy), the European Central Bank, in our opinion, has been able to effectively bond Europe together in moments of deep economic crisis and inability to start new cooperative policies (Genschel & Jachtenfuchs, 2021; Schelkle, 2017). The work intends to examine the changing role of the ECB with regard to monetary policy and supervision of banks, analysing the crisis events in which its independence, effectiveness and intervention capacity rapidly evolved signalling the metamorphosis of this European institution, its embracing new goals and radical reforms in facing the worst global crises of the new millennium.

1.1 The ECB role in the 2008 crisis

After an initial decade of relative quietness, the outbreak of the Global Financial Crisis (GFC) exposed the ECB to the stark limitations of its restricted mandate, as well as the complex challenges of serving as a central bank for multiple nations, each with its economic characteristics.

The 2008 crisis in the USA was preceded by years of financial deregulation (the abolition of the Glass Steagall Act in 1999 marked a point of no return) which encouraged careless behaviour, management without sound prudential criteria and unscrupulous speculation to the detriment of the stability of the global financial system.[6] The crisis that arose in 2008 triggered another crisis in several European countries and the ECB played an important role in both of them. As a brief premise, we can say that the crisis originated in the United States when, due to a slowdown in the American economy, thousands of citizens were no longer able to continue paying the mortgage on their house and the banks around the world that had investments related to those mortgages (having bought derivatives that contained them) began to lose money (Sorkin, 2009). Because of insufficient information about the capitalization of European banks and their exposure to 'toxic' assets from the US, confidence in the market collapsed along with interbank lending, paralyzing the European banking system (Campos, 2023; Caporaso, 2018). The EU Commission finance ministers and directors of the central banks realized that banking supervision was rather opaque and began to think that the surveillance system should be centralized, and banks should be made more transparent.

Several German, French, British, Irish, Danish, Dutch and Belgian banks had heavily invested in the (risky) American-created mortgage-backed securities (MBSs) markets (Hardie & Thompson, 2021); nonetheless they were promptly supported by

[6] This law was introduced in 1933 during the New Deal in order to regulate the financial system and thus control the speculation by separating ordinary credit banks and investment banks. Bill Clinton cancelled this reform in 1999 and opened the doors to renewed and fearful speculative excesses of wild finance. Both Paul Krugman and Joseph Stiglitz indicated such deregulation among the causes of the 2008 crisis (Ball, 2018).

their governments at a considerable cost (bail out): the volume of aid totalled 1.6 trillion euro between 2008 and 2011 (around 13 per cent of the annual EU GNP) (EU Commission, 2012; Tomczak, 2017).

The ECB's initial reaction to the crisis was possibly slow and uncertain, clinging to interest rates as its primary instrument and maintaining a narrow focus on price stability, perceiving inflation as the preeminent danger, even amid a severe recession. Surely, the difficulties that the ECB would have encountered were not immediately evident. Similarly, it was not initially apparent that the currency union would be threatened with potential dissolution.

Synthetically, the ECB was sluggish in reducing interest rates and prematurely increased them during the ongoing economic downturn.[7] Furthermore, the ECB was hesitant to adopt unconventional monetary policies that were being implemented by other central banks and initially dismissed such strategies outright (Hjetaker & Tranoy, 2021). Although the ECB was slower to lower interest rates and to implement monetary policy measures compared to other central banks, such as the Federal Reserve (Fed) and the Bank of England (BoE), it ultimately intervened with several and substantial refinancing operations (by means of reduced rate tenders) with the aim of providing the necessary amount of liquidity to troubled banks. Between 5 and 15 October 2008 the Governing Council issued a first package of unconventional measures, namely refinancing operations through fixed rate tenders (at 3.75 per cent) showing unmistakable willingness to offer unlimited amounts of liquidity. However, the situation did not improve and therefore on March 11, 2009 the rate on these transactions fell to 1.5 per cent: in June, 442 billion euro were allocated to 1,121 euro area banks (Banfi & Di Pasquali, 2012, pp. 91–93).

Thanks to these massive and timely liquidity injections, the ECB avoided a generalized banking crisis in the euro-system. This was the first major ECB test as a lender of last resort (LLR) in times of crisis and it passed it (Cornel, 2020; De Grauwe, 2016, p. 217). Today, the literature is quite consistent on the fact that the ECB has fully assumed the role of LLR since the outbreak of the crisis: "While staying focused on price stability, it fulfilled the two classical roles of a lender of last resort: it resolved money market tensions and acted as a market maker of last resort to repair monetary transmission" (De Grauwe, 2013; Buiter & Rahbari, 2012; Eichler & Hielscher, 2012; Herr, 2014; Fauri, 2017). In this way the ECB avoided the emergence of a generalized banking crisis.

However, it was clear that EU members had performed a (too) lenient supervision on their respective banking system (EU Commission, 2009). Thus, the 2008 crisis had another fundamental effect: it pushed towards a necessary change in the supervision of the EU banking system. Until then the surveillance performed by individual central banks, or other in charge supervisors on their national banking systems was not planned to prevent international crises (Recine & Teixeira, 2009).

[7] On April 7, 2011, the ECB hiked the rates to 1.25%. This apprehension over inflation was, in reality, more germane to Germany, where a surge in demand for German automobiles and machinery began in 2009, fuelled by the Chinese government's stimulus measures. In contrast, much of the Eurozone was more imperilled by deflation than inflation.

The European supervisory framework, based mainly on cooperation and information exchange between national supervisors, worked badly in time of crisis where national interests obviously tended to prevail (Ferrarini & Chiarella, 2013; Ferrarini & Chiodini, 2009). Thus, the financial crisis of 2008 brought to light the opacity of European banking supervision, which was organized on a national basis while the banking sector—through the activity of cross-border banking groups—had become international (De Grauwe, 2016; Heisenberg, 2014).

Very soon after the outbreak of the crisis, in October 2008, the European Commission set up a high-level group of experts, chaired by Jacques de Larosière, to formulate a report containing proposals to strengthen the European regulatory framework across all financial sectors (Begg, 2023). In February 2009 the report was published (de Larosière, 2009) and following its recommendations a new European System of Financial Supervision (ESFS) was introduced in all EU countries (Ferrarini & Chiodini, 2009). In the ESFS the ECB started to act as a very relevant actor in European supervision, even though it was not a protagonist yet.

The ESFS is based on a joint framework for macro and micro prudential supervision where the main actors are the European Systemic Risk Board (ESRB), responsible for the macro-prudential oversight of the financial system and established under the auspices and with the support of the ECB; and the networks of European national supervisors coordinated by three new sector-specific European Supervisory Authorities (ESAs) with micro-prudential supervisory tasks: the European Banking Authority (EBA), the European Securities and Markets Authority (ESMA) and the European Insurance and Occupational Pensions Authority (EIOPA) (Ferrarini, 2015).

The institution of the ESRB was thus a first step towards macro-prudential supervision where the ECB President was entrusted both with the chairing of its decision-making body, the General Council, and the participation in the Steering Committee (Masciandaro et al., 2009). As far as micro-supervision is concerned, the task of the three above-mentioned ESAs was and still is to develop regulatory and technical standards, which are subsequently adopted by the Commission; they also issue guidelines and recommendations and intervene when there are breaches of EU law by national supervisory authorities and in the case of emergency situations and disagreements between national competent authorities (Cacciatore, 2019; Ortino, 2018). Although the ESFS is a quite complex entity, the relevance of the role of the ECB is indeed evident: it is in charge of an important part of the responsibility for macro-prudential oversight of the European financial system and a representative of the ECB is appointed as an observer to the Board of the EBA.

The de Larosière report recognised that the European Systemic Risk Board was best positioned to centralise macro-prudential supervision, while micro-prudential supervision would remain a decentralised structure, fully respecting the proportionality and subsidiarity principles of the Treaty (and thus also avoiding conflicts with the ECB's monetary policy commitments and exposure to excessive political pressures). Therefore, existing national supervisors, who are the most familiar with the markets and institutions they supervise, continued to carry out day-to day supervision and preserve most of their actual competences. The ECB acquired a

relevance in the supervisory framework that it never had before, but micro supervision remained substantially decentralized (De Rynck, 2014).

1.2 The sovereign debt crisis and the ECB's "learning by doing"

As a global financial crisis spilled over, very soon, a second crisis affected the most fragile Eurozone countries, leading to recessions that reduced government revenues and increased public debt levels as governments paid to stimulate their economies and bail out financial institutions. The result was a rapid increase in public debt; investors became concerned about some countries' abilities to pay back their debt, leading to a loss of confidence, which in turn made it more expensive for those countries to borrow money (Baldwin & Wyplosz, 2015; Zestos, 2015). In addition, banks in many countries were especially exposed to debt of other countries, notably fragile ones. That implied that a Greek default would probably have led to a banking crisis in core countries like Germany and France. Consequently, when the value of the debt of fragile countries came into question, it threatened the stability of banks, requiring expensive bailouts that further strained government finances. This phenomenon is known as the "doom loop" and refers specifically to the sovereign debt crisis, in which the financial health of banks and that of sovereign governments became intertwined and exacerbated each other's problems. (Acharya et al., 2014).

With the 2010 sovereign debt crisis, the Economic and Monetary Union (EMU) entered a critical phase, having to address questions of an existential nature for the first time, including the risk of default of one or more of its member states.

The ECB's intervention in the sovereign debt crisis was initially unconvincing because it seemed reluctant to provide the necessary liquidity to government bond markets; however, credibility was finally restored and the Securities Market Program (SMP) was introduced in 2010 to support economic growth across the euro area and not trigger strong speculative movements against the most vulnerable countries at risk of default and/or exit from the euro. The ECB intervention succeeded in having a large and persistent effect on the decline in the state bonds' yields in the most distressed sovereign debt markets: in the case of Greece by about 165 basis points on average (Trebesch & Zettelmeyer, 2018).

Moreover, in that same year, seventeen Eurozone countries decided to set up the European Financial Stability Facility (EFSF—known today as the European Stability Mechanism) to help countries in need during the sovereign debt crisis (Smeets et al., 2019, p. 14). The Facility offered financial assistance to euro area countries, provided they committed to undertake certain reforms (aimed at preventing the recurrence of similar crises). The ECB thus led joint financial assistance operations and began to help the most troubled Eurozone countries that required support: Greece, Ireland, Cyprus, Portugal and Spain (Fauri, 2017). The joint work with the European Commission and the IMF created the informal but extremely powerful alliance, often referred to as the Troika, able to provide financial aid to member states facing crises. The ECB augmented its authority in an unprecedented way, going well beyond its monetary policy tasks.

The contagion of the Greek crisis to the other countries was thus avoided through this joint intervention (Baldwin & Wyplosz, 2015 p. 487; on the Greek case and the different opinion on IMF-EU intervention—too generous vs. too harsh—see: Blustein, 2016; Grigoriadis, 2011; Zettelmeyer et al., 2013). The sovereign debt crisis was put under control (and did not seriously affect Italy, where the rescue cost would have been significant—Heisenberg, 2014 p. 246). Furthermore, in 2011 and 2012, timely injections of liquidity, such as the two loans to European banks for over €1 tr. at negligible rates (called LTROs or Long Term Refinancing Operations), were also provided.

However, the decisive signal that stopped the speculative activities on the debt crisis came from Mario Draghi in July 2012. In his famous speech, he declared in fact that the euro was irreversible and that the ECB would have preserved it at all costs. The transition between former president Jean-Claude Trichet and Draghi (November 2009) had marked indeed a different approach to monetary policy (Macchiarelli et al., 2020) but especially to political leadership. The ECB image of a technocratic agent changed into that of an institution motivated by political objectives and was re-affirmed thereafter (Lombardi & Moschella, 2016; Spielberger, 2023).

Draghi's message was strong enough to change market expectations and the eventual bond buying operation was never started (Lombardi & Moschella, 2016; Schoeller, 2018; Verdun, 2017). The ECB president had in fact announced the launch of a three-year bank refinancing operation (in September)—conditional on countries having an adjustment programme—through the purchase of unlimited amounts of government bonds if necessary (a program known as OMT or Outright Monetary Transactions). Yet real interest rates on government debt in most distressed EU countries started declining substantially, without the ECB actually proceeding with purchases of state bonds. It was enough for the ECB to declare its commitment to intervene to cool speculation down while bond yields started dropping (Rapone, 2015, p. 165).

Later on, in July 2013, the ECB formally introduced forward guidance into its monetary policy framework which involves communicating explicit information about the likely trajectory of future policy (De Haan, 2023). Forward guidance would help responding to the economic conditions at the time, including low inflation rates and the lingering effects of the financial crisis. Precisely, on July 4th, President Mario Draghi, announced that the ECB Governing Council expected the key ECB interest rate to remain at stable or lower levels for an extended period of time. This was a significant departure from the ECB's historical approach to monetary policy communication, which had previously been more reserved about providing explicit signals regarding the future path of interest rates.

Even if the Federal Reserve had been using forward guidance as a policy tool since 2008, the ECB was able in this way to provide additional stimulus to the economy by reassuring markets the monetary policy would remain accommodative for as long as necessary to achieve its inflation target.

This active commitment by the ECB continued in subsequent years, particularly to reverse the deflationary tendencies.

In 2014, the Governing Council of the ECB initiated a new program for the purchase of asset-backed securities and guaranteed government bonds in order to inject liquidity into the system. In 2015, Quantitative Easing (QE) was introduced, a monetary easing operation which consisted of the ECB's acquisition of government bonds for €60 billion a month "until September 2016 or even later until the inflation does not take a sustained path towards 2%" (Merli, 2015). In March 2016, this government bonds purchase program rose by €20 billion a month, reaching €80 billion, and then in August of the same year Draghi announced that the QE would be extended to 2017. The most immediate and striking impact was the weakening of the exchange rate and its positive effect on exports, successfully "averting another Great Depression" (Ashworth, 2020).

Finally, in March 2017, the Eurozone was out of the feared deflation territory, with the inflation rate back to around 2%. Not only that, also bank credit had finally increased—in January 2017 loans to businesses grew by 2.3% a year, while lending rates to companies dropped by 113 basis points (Merli, 2017). With its unlimited firepower, the central bank is the only institution capable of stabilizing the financial system since it is the only bank that can provide liquidity without limits and prior warning (De Grauwe, 2013). The ECB had clearly learnt by doing about the traditional and powerful role of central banks being the only institutions capable of acting as lenders of last resort to banks and sovereigns in order to defend financial stability (El-Erian, 2016). The European Central Bank emerged from the sovereign debt crisis as one of the most powerful supranational institutions and convinced member states to entrust it with more responsibilities (Heldt & Tony, 2021).

This happened in banking supervision as the new European System of Financial Supervision (ESFS) which should have averted other financial crises, proved its limits; it clearly emerged that, while cross-border cooperation could sufficiently work for ongoing supervision on multinational groups, fully centralized mechanisms for supervising and resolving banking crises were the only way to prevent the national bias of local supervisors and cut the link between banks and sovereigns.

Thus, the safeguarding of financial stability required an effective combination of micro and macro-prudential approaches to EU supervision, both to be performed at a supranational level (Recine & Teixeira, 2009). Consequently, Eurozone member countries agreed to commit part of their sovereignty to more solid supranational supervisory institutions. In 2012, the Eurozone member states together with the EU institutions embarked on creating the European Banking Union (EBU) with the aim of making the Eurozone banking systems less tied to sovereign debt and banking supervision more centralized (Comacho, 2023; Parchimowicz, 2023).

The EBU established a uniform regulation (single rulebook) and planned the following pillars: the Single Supervisory Mechanism (SSM), the Single Resolution Mechanism (SRM) and the European Deposit Insurance Scheme (EDIS); unfortunately, the last one has not yet been agreed, so the EBU is still incomplete.

The EBU is considered the most important European integration project after the single currency (Comacho, 2023) and the responsibility of the SSM was attributed to the competence and authority of the ECB which was consequently placed directly

in charge of the micro-prudential supervision of Eurozone banks (besides being indirectly involved in the macro-prudential supervision through the ESRB).

Consequently, the ECB nowadays holds the responsibility for the entire system of prudential supervision in the euro area, even though the SSM (which became operational in November 2014) relies on enhanced cooperation between the different actors (Gortsos, 2015). The sharing of responsibilities between the ECB and the NCAs is based on the concept of significance, which allows a distinction to be made between more significant banks and less significant banks (according to the total value of their assets). Hence, the ECB through the SSM is responsible for the direct supervision of "significant banks", while the NCAs are in charge of the direct supervision of the "less significant banks", unless the ECB decides to directly supervise any one of these banks to ensure that high supervisory standards are applied consistently (Gren et al., 2015). Each significant bank is supervised by a Joint Supervisory Team (JST) composed of both the ECB staff and the national supervisors of the country where the bank is located (Wissink, 2017). The SSM has introduced a complex division of tasks and close interaction between the ECB and the NCAs, which follows a sort of experimental organization of governance in which the Supervisory Team learns from diverse bank business models and supervisory practices, trying to adapt common rules and procedures to the specificities of individual banks (Zeitlin, 2023).

The Single Supervisory Mechanism is assisted by another supranational instrument of the same scale, the Single Resolution Mechanism (SRM), ensuring a standardized and orderly resolution of failing banks under the ECB supervision (Boccuzzi, 2016). In fact, if the funding of bank resolutions had continued to rest with national governments, it would not have been possible to break the vicious circle between financial and sovereign debt crises (Howarth & Quaglia, 2014). Henceforth, the EBU unitary structure is currently able to strengthen crises prevention and change their possible impact on stakeholders. In particular, if in the past the cost of an insolvent bank was allocated upon the community of taxpayers who shared the debt burden of its bankruptcy, today it's no longer possible. The SRM allows bank resolutions to be managed effectively through a Single Resolution Board (SRB) and a Single Resolution Fund (SRF), financed by the banking sector (Binder, 2023).

In summary, following the sovereign debt crisis, the ECB has been entrusted with direct responsibility for the micro-prudential supervision of the most important banks in the euro area. It also actively collaborates with the NCAs in the supervision of less relevant banks and it is an important player in the resolution mechanism as well. The important role now performed by the ECB in the European banking supervision had been already envisaged in 2008 in the work of de Larosière, but the final report did not foresee such a relevant transformation (Ferrarini & Chiodini, 2009). The ECB has been able to learn from its mistakes while crises have been a stimulus to change, effectively expanding its tasks and responsibilities in the Eurozone.

1.3 The COVID-19 pandemic crisis

The ECB bond purchase programmes contributed to maintain stable and sound financial markets until March 2020 when the world had to face the COVID-19 pandemic crisis with its related profound impact on the global economy and repercussions on financial markets. In response to the economic impact of the pandemic, central banks in the world adopted still more loose monetary policies to strengthen the control of the financial consequences of the pandemic and rescue the economies from the downturn.

In the Eurozone the point was to avoid yet another financial crisis triggered primarily by the strong increase of sovereign debt, due to the fiscal measures immediately adopted to support the economies. In effect, the increase in sovereign debt renewed concerns about the Eurozone sovereign-bank nexus (ECB, 2020). The ECB immediately expanded the set of unconventional monetary policy measures with the aim of guaranteeing favourable conditions to fund the real economy. In this context, the monthly bond purchases already under way were supported by a temporary additional endowment of €120 billion for further securities purchases until the end of the year. In addition, starting from March 18, 2020, a new temporary programme, known as the Pandemic Emergency Purchase Programme (PEPP) was introduced. Initially the PEPP envisaged additional purchases of public and private sector securities for a total of €750 billion until the end of the critical phase of the emergency, but in order to preserve favourable financing conditions throughout the crisis, it was steadily increased to reach a total of €1,850 billion and the horizon of net asset purchases was extended until the end of March 2022 (ECB, 2020).

These measures proved successful in helping the EU economy to absorb the shock of the coronavirus pandemic and have helped mitigate risks to financial stability. With the contribution of fiscal policies, corporate insolvencies have been limited and the rise in unemployment contained. Sovereign debt markets have remained stable, and these policy actions have prevented adverse feedback loops between the real economy and the financial system. The ECB successful learning process up to the Covid pandemic was put to use: "learning concerned objectives, instruments as well as an awareness that timely and forceful response was crucial, so that the member states and other EU institutions had time to act" (Quaglia & Verdun, 2023b, p. 635). Learning by doing helped not to make the same mistakes and not to delay intervention.

Concerning the responsibilities took on by the ECB in the Eurozone banking supervision, the onset of the Covid-19 has represented a sort of test of the effectiveness of what had been done over the previous six years. The situation seemed immediately not so bad because banks were strictly supervised by the SSM and additionally complied with the strict requirements envisaged by the Basel Committee (Af Jochnick, 2021).[8]

[8] Banks set up different kinds of capital buffers that could be used in crisis situations as suggested by the Basel Committee on Banking Supervision—the primary global standard setter for the prudential regulation of banks born in 1974.

A first measure taken by the ECB Banking Supervision, was a temporary relief of capital and liquidity buffers in order to allow banks to manage more resources to support the economy. A second measure regarded a more flexible treatment of non-performing loans by supervisory authorities, in particular loans under Covid-19 public moratoriums. Finally, the SSM put forward a recommendation inviting banks not to pay dividends and share buy-backs until at least October 2020 and limit them thereafter until at least September 2021; even this measure aimed to bolster banks' capacity to absorb losses and support lending to businesses and households (Enria, 2021; Quaglia & Verdun, 2023a).

Beyond these general measures contemplating all banks in the Eurozone, the ECB Banking Supervision concentrated its efforts on the identification of banks' deficiencies through the Supervisory Review and Evaluation Process (SREP). In addition, the ECB Banking Supervision started to perform a deep-dive analysis into certain sectors more adversely affected by the economic impacts of the pandemic (vulnerable business sectors, such as the accommodation and food service sector).

These supervisory measures avoided further adverse economic effects on banks and on the EU economy, while the ECB successfully established itself as a valuable and respected supervisory authority. In particular, the critical issues which hampered European banks from effectively facing previous crises had been settled: banks were sufficiently capitalized, could make use of adequate liquidity and new instruments were introduced which helped them safeguard their stability and support the economy during crises (e.g. the Eurosystem's minimum reserve requirements). During the pandemic crisis, for the first time, the ECB had the opportunity to use instruments both on the monetary and the supervisory side which could pursue complementary objectives as they were both allocated at the euro area level. In this way the ECB established itself as capable manager in times of crisis.

1.4 Russia's war against Ukraine and Europe's economic crisis

From the first day of Russia's unjustified invasion of Ukraine on February 24, 2022 the European Union made the collective decision to support Ukraine and the ECB took the same stand. Since the war began, the EU has provided Ukraine with €67 billion in economic, humanitarian, and military support (Romano, 2023). Moreover, the Council of the EU has decided by unanimity on imposing unprecedented sanctions against Russia.[9] As of February 2024, 13 packages of restrictive measures have been passed by the EU increasing targeting Russia with individual, economic and trade sanctions, with the aim to impose severe consequences on the invader for its actions and to effectively thwart Russian abilities to continue the aggression. They

[9] The war has provoked growing isolationism and a "selective re-globalization between like-minded countries" unquestionably pushing Russia towards China (Ottaviano, 2022). The latter is not only benefiting from the redirection of Russian trade but is carving out an important role in the resumption of peace talks (Faiguso, 2023).

apply to more than 2,000 individuals and have dealt a huge blow to those who enabled Russia's illegal war against Ukraine.[10]

Although escalating commodity prices have mitigated the effects of sanctions (strong Russian revenues from the sale of natural gas and oil hit $155.26 billion in 2022) crude oil prices forecasts are on the downside, while military spending is on the rise (according to the Russian Finance Ministry they will reach 9,500 billion by the end of 2023) (Scott, 2023). Mounting inflation and tension on financial markets have been the effects of the war on the EU countries. Europe is indeed the area affected the most, given its trade links and proximity to Ukraine and Russia and its reliance on energy and food supplies from those countries (Liadze et al., 2023). However, the EU has successfully freed itself from Russian energy dependence. The price to pay was high, but if at the beginning of the conflict Gazprom dominated the EU market with a share of more than 40 per cent of supplies, in February 2023 this share covered just 7.5 per cent of EU imports. Russia has been undermined by liquified natural gas imports from the United States, albeit at a much higher cost, but capable of saving the EU from a much distressing energy crisis (Bellomo, 2023).

Since the very outbreak of the war, the ECB stood ready to take whatever action was needed to finalize financial sanctions against Russia (including the freezing of foreign reserve assets of the Central Bank of Russia) and, till now, has ensured price and financial stability in the euro area. On the one hand, the implementation of the sanctions entails a new perspective on the ECB's role. Scholars have underlined how this full involvement in sanctions has determined "the weaponization of finance" on the part of the ECB, a monetary and financial warfare spurred by geopolitical considerations (Quaglia & Verdun, 2023b).[11]

From the supervisory point of view, the ECB Banking Supervision is not responsible for monitoring EU banks' compliance with the sanctions. However, its supervision focuses on banks' governance and their internal control systems as they play a critical role in implementing the sanctioning policy (Enria, 2023). The ECB Banking Supervision, together with the national authorities, also monitors the impact that these sanctions could have on the banks' balance sheets. Consequently, the ECB

[10] The EU economic sanctions relate to a vast realm. First of all, financial sanctions aim to cutting Russia's access to capital markets of the EU, increasing borrowing costs for the sanctioned entities and gradually eroding Russia's industrial base, imposing assets freezes and financing bans on a number of Russian banks and blocking Russia's EU-held foreign exchange reserves by agreeing to exclude key Russian banks from the SWIFT system, the world's dominant financial messaging system. This measure stops these banks from conducting their financial transactions worldwide in a fast and efficient manner. Thus, due to the implementation of these financial sanctions 70% of the assets of the Russian banking system are under sanctions (European Council, 2023). The 13th package of sanctions against Russia focuses on further limiting Russia's access to military technologies, such as for drones, and on listing additional companies and individuals involved in Russia's war effort. With this new package the number of individual listings has reached over 2000. The target has been Russian military-industrial complex, which among other things manufacture missiles, drones, anti-aircraft missile system and military vehicles (EU Commission, 2024).

[11] As to the effectiveness of sanctions, although the Russian economy registered strong growth in 2023 fuelled by military spending and the sustained revenue from oil and gas exports' redirection to India and China, sanctions have indeed had a "significant impact", the most recent one on the loss of Russian international payments credibility (Bellomo, 2024; Rich, 2024).

remains vigilant, developing a constant dialogue with the EU banks about the effects of sanctions on their efficient operation.

Beyond the issue of sanctions, as said, the war added heavily to the inflationary pressures building up in the euro area during the post-pandemic recovery and pushed up consumer prices, especially for energy and food. Headline inflation increased from 0.3% in 2020 to 2.6% in 2021 and then to 8.4% in 2022. Energy and food inflation accounted for over two-thirds of this record-high inflation in 2022 (Arce et al., 2023). While in 2022 energy inflation was by far the most significant driver of inflation, the largest contribution has come from food inflation in 2023. Food prices increased by 14.1% in January 2023 compared with the previous year (wheat and oilseeds in particular). In line with the ECB's mandate, the Governing Council committed itself to bringing inflation back to the 2% medium-term target in a timely manner, but according to Orphanides (2023) the monetary policy of the ECB failed to promptly raise interest rates (considering that the EU economy was recovering quicker than expected) contributing to fuelling high inflation. The ECB wasn't the sole central bank ensnared in this trap; the Fed also found itself in a similar situation. Orphanides blames the ECB's delay in raising interest rates to the previously mentioned practice of forward guidance, which implied a commitment to maintaining policy rates at their lowest possible levels for an extended period, even amidst a surge in inflation.[12] However, recent studies show that forward guidance successfully reduces market uncertainty especially when the central bank is able to communicate the expected workings of the tools and their implementation (Coenen et al., 2017; Lin & Peruffo, 2024).

Finally, starting from September 2022 the ECB began to raise the interest rates. From the point of view of banking supervision, the ECB's decision to raise interest rates is usually good news for banks because they can earn more from the net interest rate margin (NIM) (Farah et al., 2022). However, the increase in interest rates may lead to a potential deterioration in asset quality as bank borrowers could find themselves in struggle to repay their debt (Af Jochnick, 2023). For this reason, the ECB Banking Supervision has performed a targeted review of interest rate risk in the banking books, looking closely at bank exposures to the sectors especially sensitive to interest rates. The aim is to avoid that the stock of non-performing loans, which was shrinking in 2022, reverses its trend.

Despite some criticism on Lagarde's delay in reacting to soaring inflation (the ECB was slower than the Fed or Bank of England to start raising rates or to withdraw the massive monetary stimulus deployed for much of the past decade) other economic observers praise Lagarde for rebuilding unity among ECB monetary policymakers and preventing recent economic shocks from spiralling into a financial crisis (Arnold, 2023). Despite the widening of borrowing costs, which is currently one of the most difficult problem to tackle for European monetary authorities (Jones,

[12] The spike in inflation during the post-pandemic economic recovery highlighted the shortcomings of shaping expectations about policy rates solely through explicit communication of future interest rates, rather than employing a clear, forward-looking reaction function. Critics argue that a forward-looking rule, which adjusts the nominal interest rate according to the evolution of the inflation outlook, provides a superior framework for systematic monetary policy.

2022), if the robust raise in interest rates will be capable "to knock on the head" the inflation monster, the ECB's policy will prove successful, and it will again demonstrate that it can catch up quickly from a slight delay and keep learning from past missteps (Financial Times, 2023). Indeed, in March 2024 the ECB revised its inflation projections downwards (2.3 per cent), thus feeding hopes for an interest rate cut in June when President Christine Lagarde finally expects to be able to reduce the current restrictive stance (Sorrentino, 2024).

2 Conclusion

We would like to underline a few things in closing this contribution: first, we hold that also institutions benefit from learning by doing: when the ECB was established, it focused on a narrow interpretation of its mandate centred on price and financial stability and acted in a predictable way. However, the European Central Bank has gone through a process of learning by doing, of trial and error and it increasingly gained credibility and legitimacy to act in a more interventionist way and explore non-standard monetary policies. When the ECB finally decided to engage in purchasing unlimited government bonds, it established itself as lender of last resort for the Eurozone injecting trillions of euros of stimulus to counter the impact of the global financial crisis. The introduction of non-standard monetary policy measures, along with long-term credits for commercial banks and quantitative easing bond-buying programs supported economic recovery and growth across the euro area and helped the Eurozone return to inflation levels below, but close to 2%. Through the above-mentioned learning process an old truth was reassessed: with their unlimited "firepower" central banks are the only institutions capable of stabilizing the financial system. Thus, during the sovereign debt crisis the ECB learned from experience and came up with effective policies.

Second, we believe that crises provided the greatest stimulus to revolutionary institutional changes. In 2012 in responding to the turbulence brought about by the global financial crisis, the ECB was given the responsibility of the Single Supervisory Mechanism. In the short span of two years, in 2014, the new European banking supervision went live based on a new system of close cooperation between the ECB and the national competent authorities. The ECB became responsible for the Eurozone banking supervision and started to actively monitor the soundness of the banking system through the strengthening of the banks. This was done first by improving the transmission of monetary policy and restoring the credit supply to households and businesses. Secondarily, by requiring the banks to have an adequate capital base and to promote a sustainable balance between risks and returns, the ECB set up a topmost first line of defence against the risk of financial instability.

It was a revolutionary change which changed history thereafter. With the outbreak of the pandemic, from the supervisory perspective it was recognised that the six years activity of the SSM had made banks more capitalised and liquid and able to quickly react to the uncertainty emerging from the economic consequences of the pandemic shock. The ECB has openly taken responsibility for market stabilisation, as well as for contributing to safeguarding financial stability by adding to its toolkit

these new tools (Quaglia & Verdun, 2022). The effective supervisory activity of the SSM has averted new issues coming from the banking sector that has been able to operate efficiently, supporting the economy in difficult times.

Finally, since the very outbreak of the Ukrainian invasion, the ECB contemplated three actions. First, it stood ready to take whatever engagement was needed to finalize financial sanctions against Russia, weaponizing its financial role. Second, it ensured price and financial stability in the euro area, even though its reaction to mounting inflation could have been prompter (but we acknowledge that learning by doing is not immediate especially in exceptional situation). Third, thanks to its new supervisory instruments, it increased its monitoring activities on the balance sheets of Eurozone banks responding to the threat of the geopolitical risk, which had not represented a serious risk before.

We therefore hold that the ECB's action can be explained by the process of learning gained from its experience since its birth in 1998 and that the 2008 financial crisis shaped fresh institutional reforms which have proved effective in safeguarding financial stability throughout successive external shocks. Last but not least, the European Central Bank role and actions has made up for the lack of pro-European afflatus which has characterized the member countries' governments attitude to European integrationist efforts.

Finally, alongside a very large array of scholars (Adamski, 2023; Amtenbrink, 2023; Buti & Corsetti, 2024; De Grauwe, 2022; Eichengreen, 2023 just to mention a few) we also believe that the ECB's "pragmatic federalism" (which worked under Draghi) might not be enough for the future and more powers in the fiscal/economic realm should be transferred from the national to the EU level in order to continuously adapt to the alarming geopolitical challenges of an unstable world.

Author contributions The authors worked together to the manuscript. It is difficult to distinguish each part. All authors reviewed the manuscript.

Funding Open access funding provided by Università degli Studi di Verona within the CRUI-CARE Agreement.

Data availability No datasets were generated or analysed during the current study.

Declarations

Conflict of interest The authors declare no competing interests.

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