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A tale of three crises: synergies between ECB tasks

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Abstract

This paper provides a chronology of the main financial events over the last 15 years, spanning three main crises. The first is the global financial crisis in 2008-09, and the second is the euro area sovereign debt crisis in 2010-12. Both events heralded significant reforms of the EU's governance and financial architecture. On the tail of these two crises, the ongoing COVID-19 crisis that started in early 2020 enables us to assess the working of the resulting financial framework. Two aspects stand out. The first is that the coronavirus crisis was, in its origin, exogenous from previous banking sector behaviours -which was not the case during the 2008-2012 period. The second aspect stems from the combined policy responses to the pandemic, which lacked in the 2008-2012 period. Against this background, the aim of this paper is twofold. The first is to highlight the sequence of regulatory and institutional changes, with a focus on the ECB and Eurosystem, vis-à-vis the unfolding events and against the background of broader financial reforms. The second aim of this paper is to investigate whether the sequence of financial reforms has improved the sector's ability to deal with major macro-financial shocks at the EU/euro area level, reducing the sovereign-bank doom loop. We focus primarily on developments affecting the banking sector, while noting that during the same period major developments within the EU non-bank financial sector were observed. The COVID-19 crisis has been characterized by the positive interaction of rapid fiscal and monetary responses (macro policies), and joint financial and supervisory responses. In this new policy environment the message of the paper is that the sequence of financial reforms, including the acquisition of supervisory and financial stability tasks by the ECB, have been instrumental in facilitating the effective response to the COVID-19 crisis thus far, especially compared to the previous two crises. The increased resilience and resolvability of the EU banking sector has enabled it to withstand the large and unexpected pandemic shock, while continuing to finance the real economy.

JEL classification: E42, E58, F36, G21.

Keywords: European Central Bank (ECB), monetary policy, banking union, banking supervision, financial stability, systemic risks, macroprudential policies, decision-making process.

Non-technical summary

In February 2020 the SARS-CoV-2 virus started one of the most dramatic periods in the history of the EU and the euro area. The massive economic dislocations that the coronavirus (COVID-19) pandemic caused in production, trade, investment, employment and consumption were also observed in the financial systems. Systemic financial stress (through diverse indicators) immediately became more acute and an incipient process of financial re-fragmentation emerged, driven, among others, by expected large fiscal burdens, a return of diverse risk premia and a concern that cross-country differences in crisis response could distort the competitive environment. The rapidity of the combined policy responses, through monetary and supervisory initiatives, and fiscal measures (national, and then European) immediately stood out.

Our aim is to look at the ongoing COVID-19 crisis compared with the global financial crisis in 2008-09 and the euro area sovereign debt crisis in 2010-12. These crises generated longer financial disruptions and dislocations. In response, they were followed by financial reforms, such as the Single Rule Book, Basel III, the European System of Financial Supervision (ESFS), the Single Supervisory Mechanism (SSM) and the Single Resolution Board (SRB). The COVID-19 crisis enables us to assess whether this sequence of reforms of the financial framework has had its intended impact by reducing the sovereign-bank doom loop and improving the overall resilience and resolvability of the EU banking sector.

We ask whether the financial system has been able to withstand the ongoing large, unexpected macro-financial shock while continuing to finance the economy. The answer is affirmative, but there are nuances. There is evidence that past financial reforms have been instrumental in facilitating the combined policy responses (that were absent in the previous crises). Yet several concomitant factors also played a role, including massive governments' programmes geared towards facilitating the credit flow during the most acute phases of the pandemic, and perhaps, the initial perception that the coronavirus crisis was of a temporary nature in contrast with the housing and credit bubble burst in the earlier crises.

We have seen an increase in the resilience and resolvability of the EU banking sector that has enabled it to withstand the large unexpected pandemic shock, while continuing to finance the real economy. We assemble a comprehensive set of financial indicators to compare the unfolding of the three crises. However, there is still work to be done and we must dig deeper into the precise channels and causalities.

The COVID-19 crisis was also a litmus test of the resilience of the European banking supervision. The aim of setting up a new financial regulatory framework was to create a level playing field for banks operating in the euro area, breaking the nexus between banks and their sovereigns. The pandemic is the first systemic crisis faced by the SSM since its inception. Before 2014, banking sector crisis management was

largely confined within national borders. This time around, a coordinated euro area/SSM-wide response was possible.

The descriptive evidence in the paper suggests that the SSM navigated this first real systemic crisis, and although this does not allow firm conclusions to be drawn on causality, it does corroborate findings from other studies:

- supranational banking supervision has reduced excessive risk taking by banks as suggested by Altavilla et al. (2020) as well as Haselmann et al. (2022);
- a large central supervisor benefits from economies of scale and scope and gains a broader perspective on the stability of the entire banking sector as argued by Ampudia et al. (2019) and Maddaloni and Scopellitti (2019);
- a central supervisor reduces opportunities for supervisory arbitrage by banks and entails less informational asymmetry (Kok et al., 2021).

The bank capital build-up supported by regulatory reforms after the global financial crisis and SSM implementation significantly improved the resilience of most banks (e.g. the ECB's 2020 and 2022 vulnerability analyses and the EBA/SSM 2021 stress test). If bank capital had been more constrained in the run-up to pandemic, the impact of mitigating supervisory measures might have been more modest and less effective and the same fiscal and monetary policy impulse might have yielded a smaller expansionary effect (Darracq et al., 2020).

The COVID-19 crisis has been characterized by the positive interaction of rapid fiscal and monetary responses (macro policies), and joint financial and supervisory responses. In this new policy environment the message of the paper is that the sequence of institutional financial reforms, including the acquisition of supervisory and financial stability tasks by the ECB, has been instrumental – with a timely and appropriate policy mix – in providing an effective response to the COVID-19 crisis thus far, especially compared to the previous two crises. Concerted policy responses to the pandemic helped contain the financial and real economic impact of the crisis and while monetary and fiscal policies were the first line of defence against the real economic fallout from the pandemic, the ability of the SSM to coordinate and implement a swift and meaningful policy response helped mitigate the risk of procyclical real economic amplification effects from the financial sector. This strengthened speed of reaction was also witnessed more recently in the context of the Russian invasion of Ukraine which triggered concerted supervisory responses and enhanced monitoring efforts across the SSM system (see ECB, 2022).

1 Introduction

This paper reviews the main financial events in the EU and euro area¹ over the last 15 years, spanning three main crises: the financial turmoil of 2007 and subsequent global financial crisis in 2008-09, the euro area sovereign debt crisis in 2010-12 and the COVID-19 crisis that started in early 2020. Each crisis had distinct origins, epicentres, financial and social impacts, as well as combined policy response. All three crises have led to significant reforms of the EU's governance and financial architecture, including the launch of ECB Banking Supervision, the EU safety nets, the Next Generation EU package and a more significant central fiscal capacity. This paper provides a chronology of those crisis-induced reforms.

In hindsight, before the three crises the EU had no common financial backstops for sovereigns or banks, and no crisis management and resolution framework for ailing banks. It relied on different national financial supervisory and regulatory frameworks, characterised by an uneven exchange of information and the poor coordination of non-harmonised national supervisory practices. Systemic risks to financial stability were not thoroughly taken into account in policy making. This incomplete financial architecture exposed EU countries, especially euro area countries, to adverse feedback loops between the financial system, sovereigns and the real economy that had severe negative implications for economic growth and welfare and repeatedly shook the foundations of the common currency. We should also note that the coronavirus crisis was, in its origin, exogenous from previous banking sector behaviours -which was not the case with respect to the 2008-2012 period. Hence, during the pandemic we saw combined policy responses which lacked in the 2008-2012 period: for example, the PEPP significantly reduced sovereign risks and eased fiscal support.

In response to these existential challenges, today's financial framework has evolved with respect to pre-crisis times (see Cassola et al., 2019). Some of the most significant financial reforms are the Single Regulatory Framework (Single Rule Book), the implementation of Basel III in Europe, the establishment of the ESFS, and ultimately banking union with the Single Supervisory Mechanism (SSM) and the Single Resolution Board (SRB) (but not a European deposit insurance scheme (EDIS) as yet). This has led to an enlargement of the ECB's tasks and responsibilities, beyond monetary policy, to encompass both micro- and macroprudential powers.²

¹ For simplicity, we refer to the EU throughout most of the paper, while noting that many of the developments we describe are related specifically to the euro area.

² Financial reforms should also be seen against the backdrop of changes to broader EU/euro area governance, including, but not limited to, the adoption of a financial backstop and a crisis management and resolution framework (European Stability Mechanism (ESM) backed by an Outright Monetary Transactions (OMT) commitment), and a revised Stability and Growth Pact. The implementation of various unconventional monetary policy measures by the ECB and other EU central banks clearly contributed substantially to bolstering crisis response capabilities at aggregate EU/euro area level.

Financial reforms at EU level were accompanied by regulatory changes at global level. The reform of the framework for financial regulation in the aftermath of the GFC was not an isolated European phenomenon. At global level, following the G20 summit in London in April 2009 the Financial Stability Board (FSB) initiated a suite of reforms to strengthen financial regulation that included strengthening the global bank capital framework (resulting in the Basel III package drawn up by the Basel Committee on Banking Supervision, BCBS), reducing the moral hazard of systemically important institutions, strengthening accounting standards, reforming securitisation markets and compensation practices, strengthening the OTC derivatives markets and expanding the oversight of the financial system.³ In other jurisdictions, post-crisis financial reforms reshaped the financial system. Notably, in the United States, the Dodd-Frank Act⁴ overhauled the country's financial regulation and institutional structures, including regular supervisory stress tests.

Has financial resilience improved as a result of past reforms? On the tail of the two preceding crises, the COVID-19 crisis has allowed us to assess whether the set of financial reforms has had its intended impact in terms of improving the ability to confront major macro-financial shocks at EU level. It should also be recognised that several aspects required to complete European economic and monetary union are still missing, such as full banking union and capital markets union.

The aim of this paper is twofold. The first is to highlight the sequence of regulatory and institutional changes, with a focus on the ECB, vis-à-vis the unfolding of events and against the background of broader governance reforms. Five panels summarise the main policy decisions and institutional innovations from mid-2007 onwards. The second aim is to investigate whether the sequence of reforms has helped reduce the sovereign-bank doom loop, improving the overall resilience and resolvability of the EU banking sector to withstand large, unexpected shocks while continuing to finance the economy.

The ongoing COVID-19 crisis allows us to test whether the previous financial reforms have had their intended impact in terms of improving the sector's ability to deal with major macro-financial shocks at EU level. In this paper, we focus primarily on developments affecting the banking sector, while noting that during the same period major developments within the EU non-bank financial sector were observed. The overall message of the paper is that the different financial reforms, including the enlargement of the ECB's role to include supervisory and financial stability tasks, have been instrumental in providing an agile and effective response to the COVID-19 crisis thus far, especially compared to the previous two crises.

The paper is divided into three sections. In the first section, we describe the key EU financial reforms initiated in the aftermath of the GFC. This part presents a chronology of the main changes in EU/euro area financial architecture and governance through a timeline of the main reforms and innovations. In the second

³ See Financial Stability Board (2009).

⁴ See US Government, "Dodd-Frank Wall Street Reform and Consumer Protection Act", Public Law 111-203, July 21, 2010.

section, we compare different financial soundness and fragmentation indicators, analysing developments across the three crisis periods to gauge whether the last crisis has been any different in terms of the strength and persistence of financial distress. Finally, in the third section we focus on the role of the new financial architecture in supporting the resilience of the financial system during the COVID-19 crisis.

2 Chronology of three crises⁵

2.1 Preamble: January 1999 to July 2007

The period preceding the crises, from January 1999 to July 2007, was characterised by the unfolding of the ECB’s monetary policy strategy. Price stability was broadly achieved, despite the bursting of the dot-com bubble, sharp exchange rate fluctuations and the geopolitical tensions surrounding the September 11 attack. Overall, growth was sustained, unemployment declined and trade in goods and services expanded.⁶ Money markets and sovereign bond markets rapidly integrated. Cross-border bank activity increased, but it consisted principally of short-term financial flows (e.g. unsecured interbank lending) from core countries to the euro area “periphery” that eventually turned into a credit boom in those countries. The removal of cross-currency matching restrictions led to a rapid increase in cross-country holdings of public debt (European Central Bank, 2008). In the pre-crisis period, advances in risk sharing instruments (such as securitisations, collateralised debt obligations or credit default swaps) allowed financial institutions to expand and take on more risks.⁷ As the value of the assets underlying these transactions declined (e.g. subprime loans in the United States) many of the instruments became toxic, resulting in significant losses for the financial institutions holding them. In contrast, integration was slow and uneven across other financial segments, in particular retail banking services that were still mostly provided to domestic customers.⁸

Banking supervision in Europe was characterised by a limited exchange of information at EU level and differing supervisory practices and regulatory frameworks. Moreover, there were few incentives for cooperation among supervisors until well into the global financial crisis, despite evident cross-border spillover effects (Cassola et al., 2019). In addition, there were no joint banking resolution procedures despite some bank mergers and increasing interbank funding across borders (see ECB reports on financial integration).⁹ Against this backdrop, some authors (most prominently, Padoa-Schioppa, 2003, 2006, 2007) argued that the EMU should be complemented by joint banking supervision.¹⁰

Furthermore, systemic approaches to addressing financial stability concerns were scarce. While several central banks had already drawn up analytical processes to identify and communicate threats to financial stability through financial stability reviews (e.g. the ECB has published a six-monthly Financial Stability Review

⁵ The description of the many crisis-related monetary policy measures is intentionally kept at a relatively high level, given the focus on prudential supervision and financial reforms. For more detailed accounts of the ECB monetary policy actions during this period, see Hartmann and Smets (2018), Rostagno et al. (2019) and Rostagno et al. (2021).

⁶ An overview of the first twenty years with the euro can be found in Hartmann and Smets (2018).

⁷ See Rajan (2005), Sufi and Mian (2009), Keys et al. (2010).

⁸ See the ECB report on Financial Integration and Structures [here](#).

⁹ See Financial Integration and Structure in the Euro Area, April 2022 [here](#).

¹⁰ See Dorrucci et al. (2015) and Enria (2019, 2020).

since 2004), in all countries there was a lack of systematic instruments to address and prevent identified financial stability risks from materialising (see The de Larosière Group, 2009).

When the financial turmoil (2007) and the more severe global financial crisis (2008) hit, it became clear that the EMU architecture was incomplete. The euro area governance was unable to contain persistent real imbalances and spur national reforms, where needed, and financial market discipline was absent until well into the crisis (Brunnermeier, 2009). Further, financial backstops and a crisis management framework were lacking.

2.2 Financial turmoil: August 2007 to September 2008

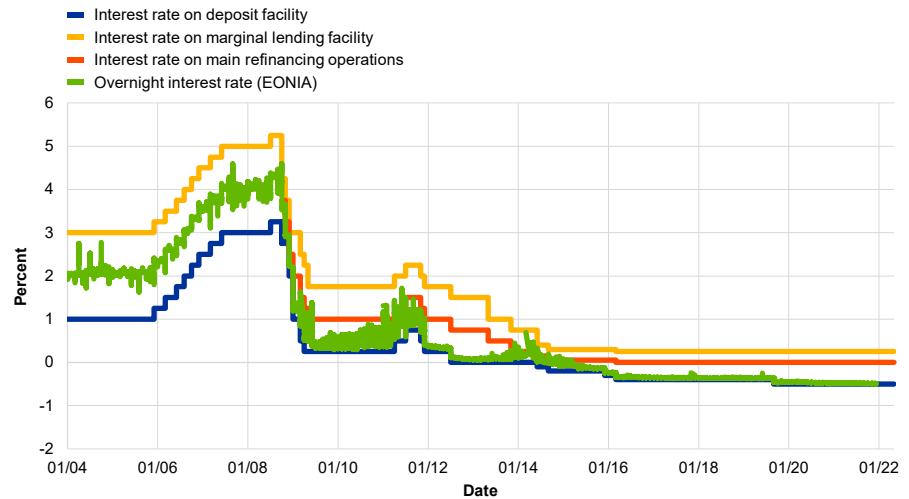
Initially, the epicentre of the financial turmoil was in the United States not Europe. Financial turbulence emerged in August 2007, when delinquencies on subprime financial products started to surge in the United States. The fact that many of these subprime loans had been packaged into complex credit risk products (such as collateralised debt obligations or collateralised loan obligations) and sold on across the global financial system, quickly led to losses at many European financial institutions. Financial market tensions then spilled over from the United States into Europe, setting in motion a confidence and liquidity crisis which caused the market for short-term unsecured funding to freeze up, as reflected in the spread between the unsecured interest rate (specifically, the EURIBOR) and the overnight index swap rate to widen in all maturities (Papadia et al., 2018).¹¹

¹¹ Some EU countries had also accumulated important macro-financial imbalances, e.g. overdimensioned real estate sectors, excessive credit growth, and large CA deficits which were exacerbated by the financial turmoil as well as the global financial crisis and Great Recession and played an important role in the subsequent sovereign debt crisis (see Mongelli (2013 and 2014) and references therein).

Chart 1

ECB interest rates and money market rates

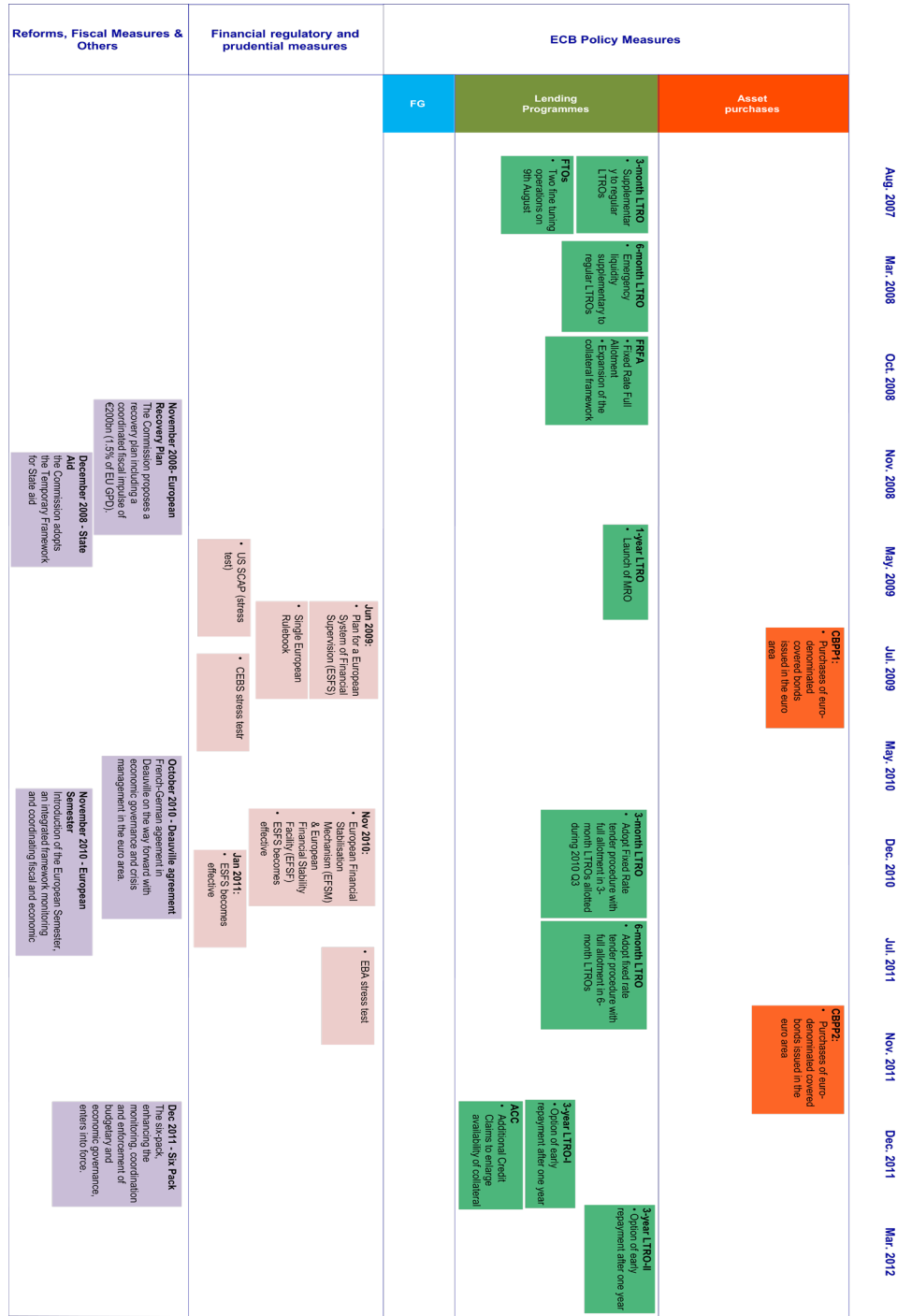
(monthly, percentages per annum)



Source: ECB.

The richness of the ECB's monetary policy instrument portfolio allowed it to respond quickly to the financial turmoil (see Panel A). For most of this initial phase of the crisis, monetary policy rates remained unchanged but longer maturities were offered on refinancing operations (three- and six-month longer-term refinancing operations (LTROs)). As market participants grew concerned about access to liquidity, the ECB responded by offering two fixed-term operations (FTO). In practice, the ECB enabled the frontloading of the fulfilment of reserve requirements while steering very short-term interest rates closer to the main refinancing operation rate (see Chart 1). In the meantime, the financial health of different US financial institutions continued to fail (as illustrated, for instance, by the rescue of the investment bank Bear Stearns in March 2008).

Panel A



Source: ECB.

2.3 Global financial crisis and Great Recession: September 2008 to May 2010

After Lehman Brothers went bankrupt in September 2008, financial tensions intensified and spread around the world, resulting in a global financial crisis that gave rise to the Great Recession some time later. Owing to Lehman Brothers' involvement in widely distributed credit derivatives contracts and complex securitisation structures, concerns about the potential domino effect in the wider financial system led to a crisis of confidence. Solvency concerns arose as several banks, both in the United States and elsewhere, were perceived as vulnerable. Their business models, relying on short-term funding, low capitalisation combined with high leverage and securitisation, became unsustainable in the market distress that followed (Adrian and Shin, 2009; Brunnermeier and Pedersen, 2009; Sufi and Mian, 2009; Brunnermeier, 2009; and Geneakoplos, 2010).

This prompted the breakdown of most segments of the euro area money market by late September 2008 (Heider et al., 2015; and Durré et al., 2014), and a hoarding of liquidity. Cuts in interest rates were coordinated among leading central banks – the ECB cut its three reference rates by a cumulative 125 basis points by the end of 2008 (see Panel A). To secure liquidity for money market participants in need, and counter a credit crunch, in October 2008 the ECB decided to offer unlimited liquidity at a fixed rate against collateral and switched from variable rate tenders that had prevailed since the launch of the euro to fixed rate full allotment (FRFA) tender procedures for all refinancing operations.

At a global level, when the global financial crisis struck, the lack of harmonisation among financial supervisory and regulatory authorities proved to be a stumbling block that slowed down policy response. In Europe, the diversity of banking supervisory practices and fragmentation of tasks also contributed to the spreading of the financial crisis: e.g., due to a lack of information sharing and the erosion of trust. This gap was accompanied by an adverse feedback loop between weak banks, indebted sovereigns and fragile economies (Schoenmaker, 2014; and Shambaugh et al., 2012). Some euro area countries experienced sudden stops, followed by a reversal of financial flows, mostly through banks (Constâncio, 2013). Later in the paper we investigate the sovereign-bank nexus over the whole sample period (2007-21).

Despite some support measures, tensions spilled over from the financial sector into the real economy, leading to the Great Recession. The collapse of Lehman Brothers hit trade financing and global trade plummeted by a third in the fourth quarter of 2008. Global economic confidence plunged, driving down production, investment and consumption. This was accompanied by a credit squeeze, with credit to households and firms drying up (European Central Bank, 2009; Hempell and Kok, 2010; Cappiello et al., 2010; and Maddaloni and Peydró, 2011). Within a few months, the euro area had entered its own severe recession, which lasted from the second quarter of 2008 until the third quarter of 2009.

Numerous policy responses were deployed across Europe, such as fiscal loosening (via automatic stabilisers), as well as bank rescues in diverse countries.¹² In October 2008, the European Commission eased the EU's State aid rules. This enabled several governments to reassure the markets and extend guarantee schemes for bank deposits and bonds, or to directly inject funds in exchange for equity (recapitalisations). A few banks were nationalised and some countries set up bad-bank schemes (Petrovic and Tutsch, 2009). In November 2008, the European Commission formulated a concerted European Economic Recovery Plan worth €200 billion to boost demand and stimulate confidence across the EU. The Stability and Growth Pact was revised and softened, and the Macroeconomic Imbalance Procedure mechanism was launched.

The ECB launched a series of measures to support monetary policy transmission. Policy rates were cut sequentially to 1.00%, the interest rate corridor was reduced to 100 basis points, liquidity in foreign currency continued to be provided by the ECB, eligibility criteria for collateral were temporarily extended, and the credit threshold for eligibility was lowered. The ECB also acquired a “market functioning support role” and in July 2009 launched a €60 billion covered bond purchase programme to be implemented over the following 12 months. Its aim was to revive this funding channel for banks and support credit intermediation.

At a global level, the stress test conducted by the US Federal Reserve in the spring of 2009 (the Supervisory Capital Assessment Program) helped to ease financial tensions. This process proved to be key to restoring confidence in US financial institutions through increased transparency and forced recapitalisations. Later in the year, the first EU-wide stress test was conducted by the Committee of European Banking Supervisors (CEBS). This test set a precedent and put in motion regular EU-wide stress tests coordinated by the European Banking Authority (the successor of the CEBS), with the close involvement of the ECB.

The combination of these policy responses had a beneficial impact on banks and financial markets. This window of opportunity was used to promote several financial reforms. At global level, the FSB, and later the G20, prepared the ground for the Basel Committee to issue the Basel III accord in December 2010 outlining new bank regulatory capital and liquidity standards. In accordance with the Basel package, the European Council of June 2009 also recommended publishing a “European Single Rulebook” that would be applicable to all financial institutions in the Single Market.¹³ Plans for a new European System of Financial Supervision (ESFS) were launched in June 2009, which became effective in January 2011. The first pillar of the ESFS is represented by the European Banking Authority (EBA), the European Insurance and Occupational Pensions Authority (EIOPA) and the European Securities and Markets Authority (ESMA). The second pillar is dedicated

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¹² Automatic fiscal stabilisers refer to the elements built into the government budget that reduce fluctuations in economic activity without the need for discretionary actions; see European Central Bank (2020) [and related references](#).

¹³ Its three main pillars are: the Capital Requirements Directive IV (CRD IV) and Capital Requirements Regulation (CRR), implementing Basel III in the EU, and the Bank Recovery and Resolution Directive (BRRD). The CRD IV and CRR addressed the problem of insufficient capitalisation of banks, the amended directive on deposit guarantee schemes endorsed the broadly-agreed deposit guarantee of up to €100,000 and the BRRD introduced a “bail-in” mechanism.

to macroprudential supervision and centred on the European Systemic Risk Board, which has been mandated to identify systemic risks.

However, despite the impact of these policy responses and a strengthened EU institutional framework, new challenges were looming in the euro area.

Attention started to shift to sovereign debt overhangs and housing bubbles. Given the substantial pressure placed on several governments by the global financial crisis and the Great Recession, fiscal fundamentals had rapidly weakened in several euro area countries. Thus, the market began questioning the sustainability of public finances in a growing number of these countries due to rising deficits and swelling public debt.

2.4 Euro area sovereign debt crisis: May 2010 to the second half of 2013

In late 2009, market concerns about the sustainability of Greek public debt were amplified by large-scale revisions of its fiscal statistics.

In April 2010, faced with losing market access, the Greek government, the European Commission and the International Monetary Fund (IMF) signed a Memorandum of Understanding on a programme to deal with the country's fiscal, structural and macroeconomic imbalances.

The Greek programme was funded via bilateral loans provided by the euro area Member States and then through EU/IMF support, which was conditional on compliance with an agreed adjustment programme.

Two additional sources of financial assistance to countries – subject to conditionality – would be established in May 2010: the European Financial Stabilisation Mechanism and the European Financial Stability Facility.¹⁴

While Greece became the focal point of the financial crisis, contagion quickly spread to other vulnerable countries.

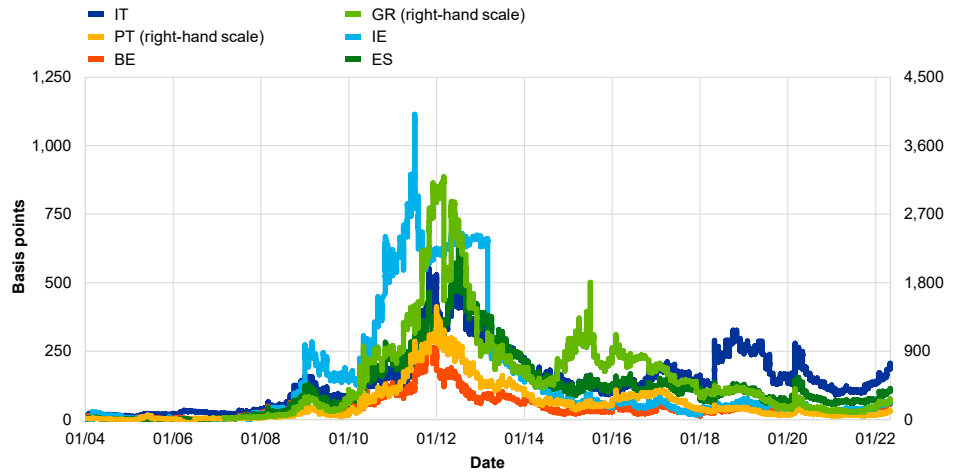
Concerns over the sustainability of public finance also arose in Ireland, Portugal and later also Spain, Cyprus and Italy. Sovereign bond spreads in several euro area countries soared (see Chart 2). Negative feedback loops between vulnerable banks, indebted sovereigns and weak economies took hold in several countries (Shambaugh et al., 2012). After an already prolonged crisis, a sequence of sovereign rating downgrades was accompanied by downgrades of the most marketable securities issued by banks in stressed countries. This, in turn, led to further downgrades across a broad range of assets in the private securities markets. The decreasing prices of these assets weakened the balance sheets of banks, while their recapitalisation through equity issuance and/or government support appeared increasingly unlikely.

¹⁴ The European Financial Stabilisation Mechanism was an intergovernmental agreement with a maximum lending capacity of €60 billion.

Chart 2

Ten-year government bond spreads versus Germany

(daily, basis points)

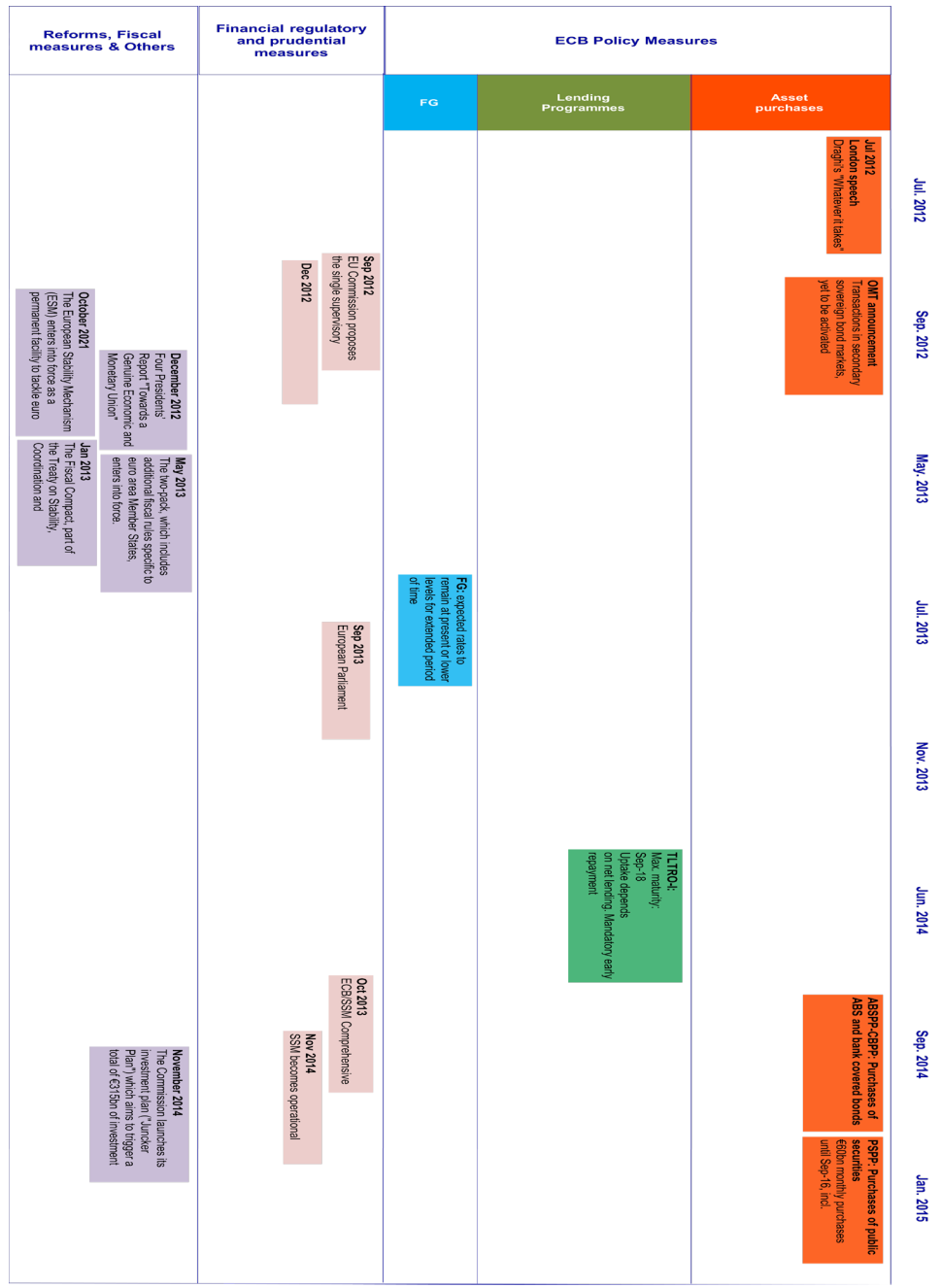


Sources: Bloomberg and ECB calculations.

Note: Spreads are calculated as the difference between the yield on the 10-year government benchmark bond of any given country and the yield on the 10-year government benchmark bond of Germany.

In May 2010, the ECB expanded its monetary policy outright portfolio through secondary market purchases from credit institutions in euro area public and private debt securities markets under the Securities Markets Programme (SMP, see Panel B). The SMP was applied after Greece had received the first bilateral loans, followed by conditional support from the EU(ESFS)/IMF, in line with the programme agreement.

Panel B



Source: ECB.

In December 2010, the EC resolved to create a permanent mechanism to provide financial assistance to countries, whereby the European Stability Mechanism (ESM) took over the tasks of the ESFS.

During this dramatic phase, financial tensions repeatedly peaked and subsided. On several occasions the ECB had to counter acute financial fragmentation and break-up risks. Cross-border transactions within the banking system ground to a halt and funds flowed out of stressed countries into national banking systems that were perceived as safer (see Constâncio, 2013; and Altavilla et al., 2016).¹⁵

All monetary policy instruments were fully deployed and new ones came to the fore (see Panel B). Policy rates were brought to unprecedented low levels. Bank funding was supported by LTROs, a second covered bond purchase programme and two very long-term refinancing operations were implemented in late 2011. The ECB also enlarged its collateral list and reduced the reserve ratio from 2% to 1%. These operations eased redemptions of maturing bonds and stabilised the provision of credit to the economy. Monetary policy transmission was partly restored, also supported by progress on fiscal consolidation.

The EU's institutional framework was strengthened through various governance reforms. In order to strengthen the governance of the euro area, the “six-pack” was finalised in December 2011, which entailed a reform of the Stability and Growth Pact, minimum requirements for national fiscal frameworks and the launch of the macroeconomic imbalance procedure. A “Fiscal Compact” to promote prudent fiscal behaviour throughout the euro area was signed in March 2012.¹⁶ This was followed by a “two-pack” that strengthened the coordination and monitoring of budgetary processes.

Nevertheless, in early 2012, weak growth and news of fiscal slippages in several countries strained financial markets once more, and financial tensions rose. A rise in redenomination risk premia of sovereign bond yields led once more to a widening in the cost of funding for several stressed euro area countries.¹⁷ It also meant that the proper transmission of the ECB's policy stance to the real economy was again seriously hampered across the euro area.

On 27 June 2012, Spain requested financial support for its banking system and Cyprus requested a full adjustment programme. Two days later, the European Council agreed to create a European banking supervision mechanism and to allow the ESM to recapitalise banks directly. This was the first step towards banking union, which required a proposal from the European Commission.¹⁸

¹⁵ For an overview of EU bank deleveraging during this period, see European Central Bank (2012).

¹⁶ The Fiscal Compact became operational in January 2013.

¹⁷ Euro redenomination risk is the risk that a euro asset will be redenominated into a devalued legacy currency. This event would follow a country leaving the euro area (see De Santis, 2015).

¹⁸ Also during this period, in December 2012, the four European Presidents outlined a [roadmap towards a genuine Economic and Monetary Union](#), see [here](#).

On 26 July 2012, ECB President Mario Draghi delivered a speech in London, in which he gave the assurance that “Within our mandate, the ECB is ready to do whatever it takes to preserve the euro. And believe me, it will be enough.”¹⁹ This landmark speech is widely credited with calming markets. Some days later, the ECB’s Governing Council announced its Outright Monetary Transactions (OMTs). OMTs consist of purchasing sovereign bonds in secondary markets under strict conditions with the aim of “safeguarding an appropriate monetary policy transmission and the singleness of the monetary policy”. The impact of this announcement was immediate and sovereign bond spreads started to contract (Altavilla et al., 2016).

In September 2012, the EC published a proposal for an SSM for banks in the euro area. The aim was to harmonise banking supervision practices and ensure that Single Market rules were applied consistently across banks. One year later, on 12 September 2013, the European Parliament voted in favour of creating the SSM, with the ECB at its centre. In preparation, a comprehensive assessment of 130 significant banks’ balance sheets was launched in October 2013.²⁰ It was completed ahead of the SSM assuming an official supervisory role on 1 November 2014.

There were several reasons for conferring supervisory and macroprudential tasks to the ECB (Constâncio, 2012; and Angeloni, 2017a-b). As a central bank, the ECB, due to its monetary policy function, had an intrinsic and deep-rooted interest in a stable financial system. Through its central bank functions, it had also developed strong expertise in financial sector issues. In addition, there was a close relationship between the microprudential supervision of individual institutions and the assessment of risks to the financial system, implying that there could be clear synergies in putting the two tasks under the same roof. There were also likely to be information-related synergies between the supervision of banks and oversight of the payments system (typically a central bank task). Furthermore, an argument could be made for the importance of operational independence from political pressure for the effective performance of supervisory tasks.²¹

There were also operational reasons for setting up the SSM at the ECB. The ECB had already built the infrastructure needed to operate the single monetary policy, gained the trust of the financial markets and successfully organised and run a network of Eurosystem technical committees (such as the Banking Supervision Committee). These are advisory bodies that support the ECB’s Governing Council. The ECB and the Eurosystem framework were thus expected and indeed proved able to support the rapid deployment of the SSM. There was also a political dimension, as any other option would have required a Treaty change.

¹⁹ The speech was delivered at the Global Investment Conference in London.

²⁰ It consisted of an asset quality review and a stress test.

²¹ See the speech by Danièle Nouy on 15 September and 1 October 2015, which stated that the European Central Bank (ECB) was “the natural home” for the SSM in order to meet all of the challenges involved in establishing it. “As a long-established and credible supranational authority accountable to the European Parliament, the ECB is in a good position to distance itself from any national concerns, constraints and pressures.” See Beck and Gros (2012), Whelan (2012) and Melecky and Podpiera (2015).

On the flipside, by taking direct responsibility for banking supervision the central bank would expose itself to reputational risk that may arise when banks under its supervision run into problems. Also, a conflict of interest between the ECB's different mandates could potentially arise. For instance, a situation where the central bank feared that an increase in microprudential capital requirements could hamper economic growth and the inflation outlook might induce it to take a more lenient supervisory stance. In contrast, there could be circumstances in which, if a number of banks were to experience solvency or liquidity problems, this might induce the central bank to adopt a more accommodative monetary policy than would otherwise be the case.

In order to minimise conflicts of interest that could give rise to biased policy making, a strict “separation principle” between the ECB's central bank tasks and its microprudential tasks has been implemented.²² In other words, there is a clear separation between setting monetary policy, which pursues price stability for the euro area as a whole, and single banking supervision, which focuses on bank stability.

2.5 The low inflation phase: from August 2013 to January/February 2020

In the second half of 2013, headline inflation began to fall once more, and inflation expectations, which up until then had been well anchored, started to decline, raising fears of deflation. Additional monetary policy accommodation therefore became indispensable. One such measure was negative interest rates, which the ECB implemented in June 2014, when the deposit facility rate was first brought below zero before rates were lowered even further in the following years (see Panel C). Slightly negative rates were aimed at restoring the signalling capacity of the central bank by breaching the zero lower bound²³ (see Constâncio, 2016) and providing banks holding excess reserves with an incentive to increase lending to the economy.

²² Article 25(4) of the SSM Regulation requires the ECB to ensure that the operation of the Governing Council is completely differentiated with regard to monetary and supervisory functions. This differentiation includes the strict separation of meetings and agendas. See Cassola et al. (2019).

²³ Real rates adjust downward compensating for low inflation and contributing to a significant flattening of the yield curve. Inflation expectations are corrected upward with the rise in aggregate demand. See Lemke et al. (2017).

Panel C

	Dec. 2015	Mar. 2016	Dec. 2016	Oct. 2017	Jun. 2018	Dec. 2018	Mar. 2019	Jun. 2019	Sep. 2019
ECB Policy Measures	Asset purchases SPP: Purchases of public securities until Sep-16, incl. APP recalibration I: Extension to Mar-17, Reinvestment APP recalibration II: €60bn monthly purchases CAPP: Purchases of APP recalibration III: €60bn monthly purchases APP recalibration IV: €30bn monthly purchases until Sep-18		APP recalibration III: €60bn monthly purchases APP recalibration IV: €30bn monthly purchases until Sep-18		APP transition: €75bn monthly purchases until Dec-18 followed by end of APP transition: End of net asset purchases APP transition: ECB capital key to		APP restart: €20bn monthly purchases from Nov-19, for as long as necessary to reinforce the accommodative impact of rates End shortly before the key ECB interest rates		
	TLTRO-II: No mandatory early repayment Min. lending rate at DFR		TLTRO-III: Quarterly operations with 2y maturity ending in Mar-21 Interest rate set at MROs+10bps Max. rate reduction to DFR+10bps if eligible loans exceed benchmark by 2.5% Borrowing limit in each operation reduced by outstanding loans from TLTRO-II and limited to 10%		TLTRO-III details release Interest rate now set at MRO rate Rate reduction to DFR if eligible net lending exceeds benchmark net lending Maturity now set at 3y		TLTRO-III recapitalization Interest rate now set at MRO rate Rate reduction to DFR if eligible net lending exceeds benchmark net lending Maturity now set at 3y		
Lending Programmes	FG: ... expect them to remain at present or lower levels for an extended period of time, and well past the horizon of our net asset		FG: ... at present levels at least through the summer of 2019 and in any case for as long as necessary to ensure that evolution of inflation remains aligned		FG: ... at present levels at least through the summer of 2019 and in any case for as long as necessary to ensure that evolution of inflation remains aligned with current expectations of sustained adjustment path Lending operations will		FG: ... intend to continue reinvesting. In full, the principal payments from maturing securities purchased under the APP for an extended period of time past the date when we start raising the key ECB interest rates, and in any case		
	FG: ... expect them to remain at present or lower levels for an extended period of time, and well past the horizon of our net asset		FG: ... at present levels at least through the summer of 2019 and in any case for as long as necessary to ensure that evolution of inflation remains aligned		FG: ... at present levels at least through the summer of 2019 and in any case for as long as necessary to ensure that evolution of inflation remains aligned with current expectations of sustained adjustment path Lending operations will		FG: ... intend to continue reinvesting. In full, the principal payments from maturing securities purchased under the APP for an extended period of time past the date when we start raising the key ECB interest rates, and in any case		
Financial regulatory and prudential	Jan 2016: Single resolution Jan 2016: SSM launches		Jul 2016 Mar 2016: ECB outlines its macroprudential Mar 2017: SSM issues		Oct 2018: EBA/SSM stress		Feb 2020 - Economic governance review The Commission presents the review of EU economic governance, aimed at evaluating fiscal rules and the economic governance framework and initiates a consultation on its future		
	Jan 2016: Single resolution Jan 2016: SSM launches		Jul 2016 Mar 2016: ECB outlines its macroprudential Mar 2017: SSM issues		Oct 2018: EBA/SSM stress		Feb 2020 - Economic governance review The Commission presents the review of EU economic governance, aimed at evaluating fiscal rules and the economic governance framework and initiates a consultation on its future		
Reforms, Fiscal Measures & Others	January 2015 - SGP flexibility Commission issues a communication on 'Making the best use of'		September 2015 - CMU The Commission adopts the first Capital Markets		June 2018 - Meseberg declaration France and Germany issue the Meseberg Declaration, outlining their joint agreement in multiple areas		June 2018 - InvestEU The Commission proposes InvestEU as a follow-up to the "Juncker Plan".		
	June 2015 - Five Presidents' Report Publication of the Five Presidents' Report "Completing		October 2015 - EMU package Commission adopts a package of measures to strengthen EMU, incl. external representation, revamped		June 2018 - Meseberg declaration France and Germany issue the Meseberg Declaration, outlining their joint agreement in multiple areas		June 2018 - InvestEU The Commission proposes InvestEU as a follow-up to the "Juncker Plan".		

Source: ECB.

Additional credit easing measures were added to revive the provision of credit to the economy. The lowering of interest rates put downward pressure on banks' intermediation margins, thus reducing profitability and compressing bank equity prices with potential negative implications for credit supply.²⁴ The ECB announced a renewed round of credit easing with a series of targeted longer-term refinancing operations (TLTROs), complemented by the ECB's asset-backed securities purchase programme and a third covered bond purchase programme (announced in September 2014).

These combined measures succeeded in putting downward pressure on long-term interest rates and flattening the term structure of interest rates (see Darracq Pariès et al., 2016; Hartmann and Smets, 2018; Albertazzi et al., 2018; and Rostagno et al., 2021). Not long after this, the financial cycle began to turn as a result of the staggered effects of the TLTROs and the expanded APP. This was, among other things, reflected in the euro area bank lending survey, which showed that the tightening of lending standards had stopped, and loans had started to grow at a modest rate.

Nevertheless, inflation forecasts were revised downwards, growth remained weak and unemployment declined slowly. This raised a new concern – that persistently below-target inflation could become entrenched. There was less and less room to absorb any further shocks from falling global demand. Hence, over the period between late 2015 and late 2019, the ECB lowered interest rates further, undertook several APP recalibrations (I-III) and introduced two new rounds of TLTROs (II-III) (see Panel C). Interest rates on sovereign bonds, corporate bonds and loans all fell. The appreciation experienced by the euro from the summer of 2015 reversed and equity prices edged higher. Overall, these further accommodative monetary policy actions contributed to stabilising economic growth, easing financing conditions and helping euro area inflation to recover somewhat from very low levels.

In mid-2015, the 2012 plan for a genuine EMU was reworked by the Five Presidents' Report.²⁵ This report set the goal of completing four unions in three stages by 2025: (i) fiscal union to draw up a framework for sound and integrated fiscal policies; (ii) economic union to promote convergence, prosperity and social cohesion; (iii) financial union that would add a capital markets union to the banking union; and (iv) political union to promote democratic accountability and the strengthening of institutions.

This period also saw the unfolding of the new SSM steered by the newly established banking supervision arm of the ECB. The first few years of the SSM entailed significant microprudential actions including concerted efforts to reduce non-performing loans (NPLs) in countries in which they were high, a gradual removal of existing options and national discretions, the targeted review of internal models from 2016 to 2021 and the regular and reinforced stress testing of banks' resilience.²⁶

²⁴ As a result, bank price-to-book ratios fell to well below 1 and their return on equity dropped below the cost of equity.

²⁵ See [here](#).

²⁶ For a more detailed description of the implementation of the SSM, see Cassola et al. (2019).

Likewise, euro area macroprudential authorities started to apply various policy measures including the phase-in of G-SIIs/O-SII buffers (global/other systemically important institutions) followed, in selected jurisdictions, by systemic risk buffers, countercyclical capital buffers (CCyB) and various real estate related borrower-based measures. In reflection of the ECB's new role, national and area-wide macroprudential measures are discussed and coordinated by the Eurosystem's Financial Stability Committee.²⁷

2.6 The COVID-19 crisis: February 2020 onwards

On 30 January 2020, the World Health Organization declared COVID-19 to be a public health emergency and, on 11 March, upgraded the threat to pandemic status. Extensive containment measures became indispensable. While the source of the shock was common to all countries, the size of the economic fallout on supply and demand has differed markedly across euro area countries (Guerrieri et al., 2020).²⁸

The following months were among the most dramatic and intense in the history of the EU (see Panel D). Immediately it became clear that the pandemic had two main dimensions: on one hand a public health, epidemiological and medical dimension (with the contagion, $R > 1$, mortality rates, vaccines and their rollouts, herd immunity, and so on), and an economic and financial dimension. All euro area economies came under extraordinary stress, albeit unevenly, and there was initially sharp financial fragmentation. The ECB's challenges became to stabilise markets, protect credit supply, and neutralise the pandemic-related downside risks to the inflation path.

²⁷ For more detailed descriptions of the new macroprudential policy framework, see Constâncio et al. (2019) and Cassola et al. (2019).

²⁸ For a detailed account of the initial financial impact from the coronavirus crisis, see Borgioli et alii (2020), while for a systematic ex-post account of the main phases of the pandemic see Kochanska et alii (2022).

Panel D

	Mar. 2020	Apr. 2020	Jun. 2020	Dec. 2020	Mar. 2021	Jul. 2021
Asset purchases	<p>APP expansion</p> <ul style="list-style-type: none"> • Extended by €120 billion in 2020 • In addition to ongoing purchases of €20 billion per month and reinvestments <p>PEPP introduction</p> <ul style="list-style-type: none"> • 2020 introduction • ECB and asset categories eligible under APP • Waiver of eligibility requirements to Greek sovereign debt instruments 	<p>PEPP expansion</p> <ul style="list-style-type: none"> • Increase by €600 to €1,350 billion • Extension by 6 months until at least June 2021 • Reinvestments at least until end of 2022 	<p>PEPP expansion</p> <ul style="list-style-type: none"> • Increase by €50 to €1,850 billion • Extension by 6 months until at least Mar. 2022 • Reinvestments at least until end of 2023 	<p>PEPP</p> <ul style="list-style-type: none"> • Purchases under the PEPP over the second quarter to be concluded at a significantly higher pace than during the first months of 2021. 	<p>PEPP</p> <ul style="list-style-type: none"> • Purchases under the PEPP over the third quarter to be concluded at a significantly higher pace than during the first months of 2021. 	
	<p>LTROs</p> <ul style="list-style-type: none"> • End in June 2020 • Project rate tender procedure with full reinvestment • Interest rate set at deposit facility <p>TLTRO-III reallocation</p> <ul style="list-style-type: none"> • Interest rate set at main refinancing operations rate +25 bps from June 2020 to June 2021 • Early repayment after 1 year 	<p>PETTROs introduced</p> <ul style="list-style-type: none"> • 7 operations from May 2020, maturing 1/7 Sep. 2022 • Interest rate of -25 bps <p>Further easing of TLTRO-III conditions</p> <ul style="list-style-type: none"> • Borrowing rate -50 to -100 bps (June 2020 to June 2021), depending on lending performance • Temporary easing of collateral requirements • Reduction of collateral valuation haircuts • Mitigation of impact of potential rating changes 	<p>Four additional PETTROs in 2021, which will continue to provide an effective liquidity backstop</p> <ul style="list-style-type: none"> • Reintroduction of TLTRO-III conditions • Forward rate borrowing rate -100 bps until June 2022 • Three additional operations between June and Dec. 2021 • Borrowing entitlement from 50 to 55% of their requirements • Reallocated conditions available only to banks that achieve a new (higher) lending target <p>Temporary easing of collateral requirements</p> <ul style="list-style-type: none"> • From Apr. 2020, lending operations until June 2022 • Continuation of lending operations as fixed rate tender procedures with full allowance for as long as needed 	<p>Regulation of TLTRO-III conditions</p> <ul style="list-style-type: none"> • Forward rate borrowing rate -100 bps until June 2022 • Three additional operations between June and Dec. 2021 • Borrowing entitlement from 50 to 55% of their requirements • Reallocated conditions available only to banks that achieve a new (higher) lending target 	<p>Temporary easing of collateral requirements</p> <ul style="list-style-type: none"> • From Apr. 2020, lending operations until June 2022 • Continuation of lending operations as fixed rate tender procedures with full allowance for as long as needed 	
Lending Programmes						
FG	<p>FG</p> <ul style="list-style-type: none"> • Sep. 2019 formulation confirmed as regards interest rates, monthly net asset purchases under the APP, and reinvestment of the principal payments from maturing securities purchases 					<p>FG</p> <ul style="list-style-type: none"> • ECB announces its new monetary policy strategy and target over medium term
Financial regulatory and prudential measures	<ul style="list-style-type: none"> • Temporary capital, liquidity, and operational relief • Recommendation against dividend payouts 	<ul style="list-style-type: none"> • Temporary reduction in capital requirements for market risk • April 2016 • SSM publishes 	<ul style="list-style-type: none"> • July 2020 • ECB vulnerability 	<p>Dec-20: Further guidance:</p> <ul style="list-style-type: none"> • Against dividend payouts • For moderation of variable remuneration • Reinforcement liquidity buffer 		<ul style="list-style-type: none"> • EBA/SSM stress test • Relaxation of prudential requirements • Recommendation by SSM
Reforms, Fiscal Measures & Others	<p>March 2020</p> <ul style="list-style-type: none"> • Council adopt a temporary stability framework to allow Member States to use full flexibility under state-aid rules. • Commission declares that the SGP will be suspended for the period necessary to undertake the necessary budgetary measures to deal 	<p>April 2020 - safety nets</p> <ul style="list-style-type: none"> • European Council endorses the European agreement on the recovery plan (SURE), businesses (EIB European Guarantee Fund) and sovereigns (ESM Pandemic Crisis Support), a package worth 540 billion 	<p>July 2020 - NGEU and MFF</p> <ul style="list-style-type: none"> • The European Council reaches an agreement on Next Generation EU, a €750bn recovery plan financed by EU borrowing, and the EU's 2021-2027 Multiannual Financial 	<p>November 2020</p> <ul style="list-style-type: none"> • ESM member states agree to proceed with ESM reform and to advance the entry into force of the common backstop to the 	<p>January-February 2021</p> <ul style="list-style-type: none"> • ESM member countries sign the Agreement providing a legal basis for new tasks of the ESM. 	<p>August 2021 - RRF pre-financing</p> <ul style="list-style-type: none"> • Following the first borrowing from the Recovery and Resilience Commission starts disbursing to Member States whose recovery and Resilience

Source: ECB.

Panel E

Reforms, Fiscal Measures & Others	Financial regulatory and prudential	ECB Policy Measures		
		FG	Lending Programmes	Asset purchases
<p>October 2019 - relaunch of the economic governance review The Commission issues a Communication taking stock of the consequences of the Covid-19 pandemic for economic governance and</p> <p>March 2022 - Versailles declaration At its informal meeting in Versailles, the European Council commits the EU to take increased responsibility for its security, taking further</p> <p>May 2022 - REPowerEU The Commission publishes the REPowerEU package, which aims to end the EU's dependence on Russian fossil fuels through energy savings, diversification of energy supplies, and</p> <p>May 2022 - General Escape Clause maintained In its 2022 Spring Package, the</p>	<p>April-May 2022 Setup of Crisis Management Structure Vulnerability Analysis of banks' resilience to Russia-Ukraine war Adopting medium-term supervisory engagement</p>			<p>Sep. 2021</p> <p>PEPP • Purchases under the PEPP over the fourth quarter to be conducted at a moderately lower pace than in the previous two</p> <p>PEPP • Purchases under the PEPP over the fourth quarter to be conducted at a moderately lower pace than in the previous</p> <p>PEPP • Net asset purchases under the PEPP over the first quarter of 2022 to be conducted at a lower pace than in the previous quarter. • It will discontinue net asset purchases under the PEPP at the end of March 2022</p> <p>PEPP • Bonds issued by the Hellenic Republic can be bought under the PEPP over and above rollovers of</p> <p>APP - Continuation of : • €40 billion and €30 billion net monthly purchases in the second and third quarter of 2022, respectively.</p> <p>PEPP • In the first quarter of 2022, the Governing Council is conducting net asset purchases under the PEPP at a lower pace than in the</p> <p>APP revision • Monthly net purchases under the APP will amount to €40 billion in April, €30 billion in May and €20 billion in June. • The calibration of net purchases</p> <p>PEPP • Purchases under the PEPP over the first quarter to be conducted at a lower pace than in the previous</p> <p>Liquidity lines with non-euro area central banks • The Governing Council has decided to extend the Eurosystem repo facility for central banks (EURREP) until 15</p>
				<p>Oct. 2021</p> <p>PEPP • Net asset purchases under the PEPP over the first quarter of 2022 to be conducted at a lower pace than in the previous quarter. • It will discontinue net asset purchases under the PEPP at the end of March 2022</p> <p>PEPP • Bonds issued by the Hellenic Republic can be bought under the PEPP over and above rollovers of</p> <p>APP - Continuation of : • €40 billion and €30 billion net monthly purchases in the second and third quarter of 2022, respectively.</p> <p>PEPP • In the first quarter of 2022, the Governing Council is conducting net asset purchases under the PEPP at a lower pace than in the</p> <p>APP revision • Monthly net purchases under the APP will amount to €40 billion in April, €30 billion in May and €20 billion in June. • The calibration of net purchases</p> <p>PEPP • Purchases under the PEPP over the first quarter to be conducted at a lower pace than in the previous</p> <p>Liquidity lines with non-euro area central banks • The Governing Council has decided to extend the Eurosystem repo facility for central banks (EURREP) until 15</p>
				<p>Dec. 2021</p> <p>PEPP • Net asset purchases under the PEPP over the first quarter of 2022 to be conducted at a lower pace than in the previous quarter. • It will discontinue net asset purchases under the PEPP at the end of March 2022</p> <p>PEPP • Bonds issued by the Hellenic Republic can be bought under the PEPP over and above rollovers of</p> <p>APP - Continuation of : • €40 billion and €30 billion net monthly purchases in the second and third quarter of 2022, respectively.</p> <p>PEPP • In the first quarter of 2022, the Governing Council is conducting net asset purchases under the PEPP at a lower pace than in the</p> <p>APP revision • Monthly net purchases under the APP will amount to €40 billion in April, €30 billion in May and €20 billion in June. • The calibration of net purchases</p> <p>PEPP • Purchases under the PEPP over the first quarter to be conducted at a lower pace than in the previous</p> <p>Liquidity lines with non-euro area central banks • The Governing Council has decided to extend the Eurosystem repo facility for central banks (EURREP) until 15</p>
				<p>Feb. 2022</p> <p>PEPP • Net asset purchases under the PEPP over the first quarter of 2022 to be conducted at a lower pace than in the previous quarter. • It will discontinue net asset purchases under the PEPP at the end of March 2022</p> <p>PEPP • Bonds issued by the Hellenic Republic can be bought under the PEPP over and above rollovers of</p> <p>APP - Continuation of : • €40 billion and €30 billion net monthly purchases in the second and third quarter of 2022, respectively.</p> <p>PEPP • In the first quarter of 2022, the Governing Council is conducting net asset purchases under the PEPP at a lower pace than in the</p> <p>APP revision • Monthly net purchases under the APP will amount to €40 billion in April, €30 billion in May and €20 billion in June. • The calibration of net purchases</p> <p>PEPP • Purchases under the PEPP over the first quarter to be conducted at a lower pace than in the previous</p> <p>Liquidity lines with non-euro area central banks • The Governing Council has decided to extend the Eurosystem repo facility for central banks (EURREP) until 15</p>
				<p>Mar. 2022</p> <p>PEPP • Net asset purchases under the PEPP over the first quarter of 2022 to be conducted at a lower pace than in the previous quarter. • It will discontinue net asset purchases under the PEPP at the end of March 2022</p> <p>PEPP • Bonds issued by the Hellenic Republic can be bought under the PEPP over and above rollovers of</p> <p>APP - Continuation of : • €40 billion and €30 billion net monthly purchases in the second and third quarter of 2022, respectively.</p> <p>PEPP • In the first quarter of 2022, the Governing Council is conducting net asset purchases under the PEPP at a lower pace than in the</p> <p>APP revision • Monthly net purchases under the APP will amount to €40 billion in April, €30 billion in May and €20 billion in June. • The calibration of net purchases</p> <p>PEPP • Purchases under the PEPP over the first quarter to be conducted at a lower pace than in the previous</p> <p>Liquidity lines with non-euro area central banks • The Governing Council has decided to extend the Eurosystem repo facility for central banks (EURREP) until 15</p>
				<p>Apr. 2022</p> <p>PEPP • Net asset purchases under the PEPP over the first quarter of 2022 to be conducted at a lower pace than in the previous quarter. • It will discontinue net asset purchases under the PEPP at the end of March 2022</p> <p>PEPP • Bonds issued by the Hellenic Republic can be bought under the PEPP over and above rollovers of</p> <p>APP - Continuation of : • €40 billion and €30 billion net monthly purchases in the second and third quarter of 2022, respectively.</p> <p>PEPP • In the first quarter of 2022, the Governing Council is conducting net asset purchases under the PEPP at a lower pace than in the</p> <p>APP revision • Monthly net purchases under the APP will amount to €40 billion in April, €30 billion in May and €20 billion in June. • The calibration of net purchases</p> <p>PEPP • Purchases under the PEPP over the first quarter to be conducted at a lower pace than in the previous</p> <p>Liquidity lines with non-euro area central banks • The Governing Council has decided to extend the Eurosystem repo facility for central banks (EURREP) until 15</p>

Source: ECB.

Monetary policy was geared toward ensuring sufficient liquidity and maintaining favourable financing conditions safeguarding the transmission of monetary policy. For this, in mid-March 2020 the ECB announced a “policy package” including monetary policy, regulation and supervisory measures. A new €750 billion pandemic emergency purchase programme (PEPP) of private and public sector securities was launched, while the asset purchase programme was increased by an additional €120 billion (on top of the €20 billion monthly purchases). The range of eligible assets under the corporate sector purchase programme was expanded to include non-financial commercial paper. On the bank funding side, the ECB continued its full allotment policy for providing liquidity through additional LTROs and improved terms and conditions for existing operations. Then, in May 2020, a new series of non-targeted pandemic emergency longer-term refinancing operations (PELTROs) was launched.

Simultaneously, the ECB also announced a range of mitigating supervisory measures. Specifically, the ECB allowed financial institutions to operate below Pillar 2 Guidance (P2G) levels until at least the end of 2022 and brought forward the use of Tier 2 and Tier 3 capital for meeting Pillar 2 Requirements (P2R). The combined effects of these measures were equivalent to freeing up about €120 billion of Common Equity Tier 1 (CET1) capital that could be used to provide loans to the private sector. The ECB also compelled all euro area banks to suspend dividend payments and equity buybacks in order to prevent the regulatory forbearance from being distributed to shareholders and not used to build up a capital buffer to provide for the expected significant increase in NPLs and other impaired assets. It also encouraged banks to fully implement the transitional IFRS 9 arrangements set out in Article 473(a) of the CRR.²⁹ In addition, macroprudential authorities across the euro area released or reduced more than €20 billion of capital buffer requirements, including the release of CCyBs. The coincidence of the above monetary policy actions with these supervisory measures, and over time the unfolding of supranational fiscal response below, sets the policy response to the pandemic apart from the policy mix of the previous two crises.

On 20 March 2020, the Commission enabled greater flexibility on State aid rules and, on 23 April, the EU Council announced three new safety nets (sometimes referred to as “financial backstops”) worth a combined €540 billion. These include:

- pandemic crisis support, to finance emergency healthcare costs related to the pandemic – an ESM facility with no macro conditionality;
- temporary support to mitigate unemployment risks in an emergency, to deal with the incremental expenses of unemployment benefits stemming from the pandemic and lockdown policies; and

²⁹ On the regulatory side, targeted revisions to the Capital Requirements Regulation (CRR) known as the “quick fix” were published on 26 June. The revisions provide further flexibility for banks in responding to the challenging situation.

- a guarantee fund at the European Investment Bank, which would operate as a backup for loan guarantees extended by national development and promotional banks.

These financial backstops also represent a concerted European policy response that complemented national fiscal responses to the pandemic (see Borgioli et alii (2020)). They are credited with countering financial fragmentation.

With new incoming data, the full economic and labour market impact of the COVID-19 pandemic became clear and the Commission tabled the discussion about the scope of the Next Generation EU (NGEU) plan. The NGEU, which was agreed on in July 2020, includes the Recovery and Resilience Facility, funded by debt securities issued directly by the EU, plus an increase in EU own resources.³⁰ In December 2020, the European Council amended ESM regulations to allow it to be used as backup for bank resolution. Thus, the resolution mechanism now has a financial backup – a further step forward for the banking union.³¹

In December 2020, the PEPP envelope was expanded further (to a total of €1,850 billion) and the horizon for net purchases was extended to the end of March 2022. These measures were accompanied by new PELTROs and a recalibration of the TLTRO III with a relaxation of the criteria for collateral, extension of the PEPP, swap and repo lines with central banks, the continuation of net purchases as part of the asset purchase programme, and key ECB interest rates remain unchanged.

The review of the ECB monetary policy strategy comes to completion. In July 2021 the ECB announced its new monetary policy strategy.³² The Governing Council aims to maintain inflation rates at 2% over the medium term, and this target is symmetric as both negative and positive deviations are equally undesirable. The interaction between monetary policy, macro-prudential policy, and financial stability are also recognised. Monetary policy decisions based on an integrated assessment by means of an economic analysis focussing on real and nominal economic developments, and a monetary and financial analysis, focussing on the monetary transmission mechanism and possible risks to medium-term price stability from financial imbalances and monetary factors.

The second half of 2021 and earlier weeks of 2022 are characterised by additional covid-19 waves albeit with lower morbidity rates that prompted a removal of restrictions to mobility. On one hand economic activity was supported by the easing of travel restrictions. Yet, on the other hand, the economic upswing was held back by persistent concerns about supply bottlenecks and climbing

³⁰ The NGEU is also to be linked with the Multiannual Financial Framework for 2021-27. The aim is to support EU countries' plans to recover, repair and emerge stronger from the pandemic while accelerating the digital and green transitions.

³¹ However, progress on the third pillar of the banking union – the common deposit insurance scheme – is still slow (see Council of the European Union, 2020, 2021; and Enria, 2021).

³² In fact, since the 2003 strategy review, the euro area economy has greatly changed exhibiting: declining trend growth and lower interest rates in the EU; and the emergence of climate change, digitalisation, (de)-globalisation, and other transformations impacting inflation, functioning of the economy and the financial system. These phenomena have reduced the scope for conventional monetary policy instruments.

inflationary pressures. Purchases under the PEPP over the third quarter were raised to a higher pace than during the first months of 2021. In August 2021, following the first borrowing operations under the Next Generation EU, the Commission started disbursing the pre-financing envelopes to those countries whose Recovery and Resilience Plans have been approved.

While economic activity gradually recovers, inflationary pressures climb posing a new policy challenge. The surge in energy prices especially since the Summer of 2021 brought an additional macroeconomic shock to the euro area and was accompanied by a steady rise in food prices and prices of several energy sensitive services (such as transportation). This ‘terms of trade’ shock had an adverse impact on real income for consumption and investment, affecting disproportionately energy-intensive activities (some of which were already affected by persistent bottlenecks). This phase of protracted and climbing inflation raised concerns about the nature of medium-term inflation dynamics and risks of re-setting - or even a de-anchoring - of inflation expectations which is not corroborated by all indicators.

The Russian invasion of Ukraine that started on 24 February 2022 represents a turning point for Europe as well as the rest of the world. The immediate impact of the attack was to rattle financial markets. While the latter partly recovered relatively rapidly, the economic impact of the protracted war started unfolding. A sequence of sanctions was levied on Russian financial institutions and entities. A new set of bottlenecks emerged due to the EU’s dependency on strategic Russian exports of rare earths and raw materials, but also various strategic supplies from Ukraine. The energy shock was vastly amplified by restrictions on fossil fuel imports from Russia. Moreover, the war and its indeterminate outcome brought enormous uncertainties which are weighing on consumer and business confidence, acting as a drag on economic activity. Diverse prudential actions were taken during April/May 2022, including: setting up a crisis management structure and identifying immediate risks; handling of individual crisis cases and building up knowledge on sanctions; expanding analysis of possible direct and second-order impacts; conducting vulnerability analysis of banking sector resilience to the Russia-Ukraine war; and adapting medium-term supervisory engagement and strategy.³³ The cut-off date of the charts in the rest of the paper is mid-May 2022, thus it is not possible to draw firm conclusions for this ongoing event.

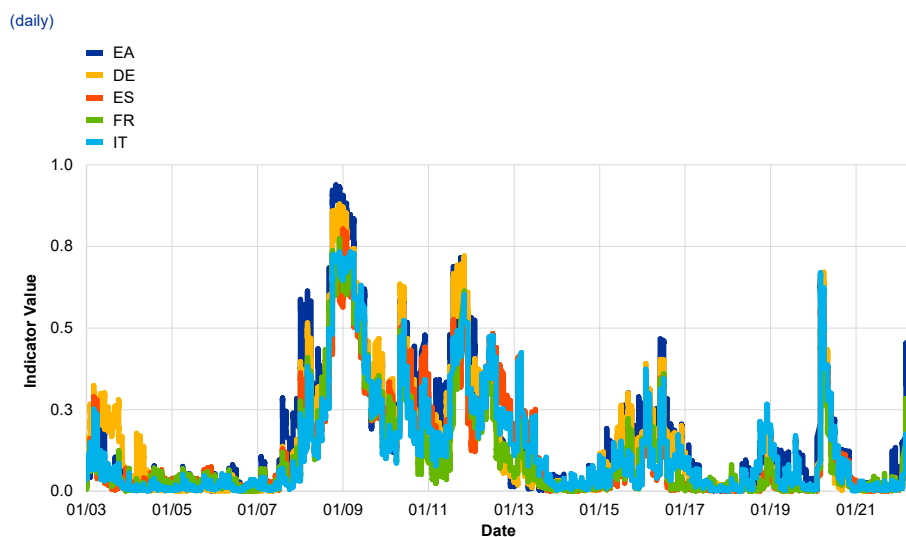
³³ See the Supervisory Newsletter from May [here](#).

3 A comparison of financial developments during the crisis periods

In this section, we seek some initial clues on several key financial indicators comparing developments across the three crises. We start with market-based indicators of financial stress and financial fragmentation in the euro area, and then focus on bank credit developments in order to assess whether and how crisis-induced distress impaired the smooth provision of credit to the real economy.

The CISS indicator³⁴ (Chart 3) and the CDS spreads of euro area banks (Chart 4) both signalled severe and persistent stress in the euro area financial sector during the financial turmoil and global financial crisis, and throughout the sovereign debt crisis. At the same time, while these indicators of financial distress bounced back in the early stages of the COVID-19 crisis, in March-April 2020, not long after they returned to more normal levels. This suggests that the concerted mitigating actions by the fiscal, monetary and prudential authorities were highly effective. The CISS indicator also exhibits a spike in the aftermath of the Russian invasions. Yet, most subsequent indicators in this section are relatively less affected.

Chart 3
CISS indicator



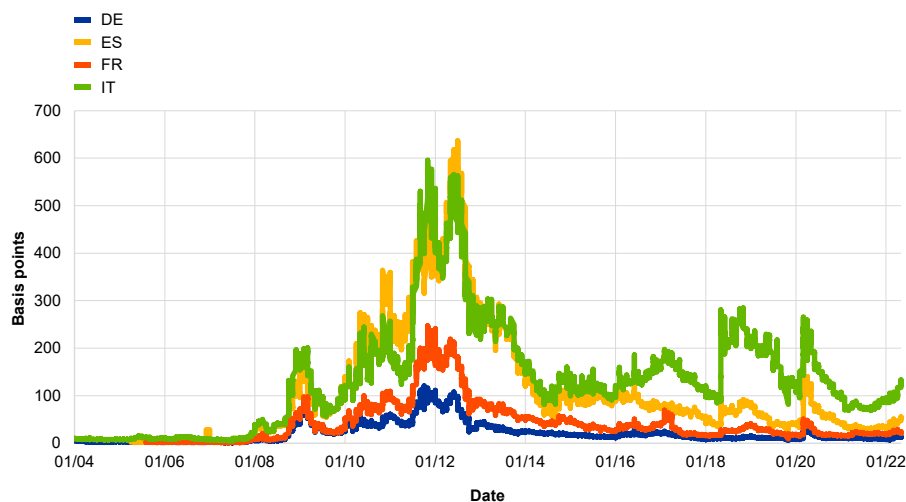
Sources: ECB and ECB calculations.

³⁴ The CISS aims to measure the current state of instability in the financial system as a whole or, equivalently, the level of “systemic stress”. See Kremer et al. (2012) and Hoffmann et al. (2019).

Chart 4

Euro area bank CDS spreads

(daily, basis points)



Sources: ECB and ECB calculations.

Two further indicators provide additional insights.

In line with the CISS indicator and bank CDS spreads, the indicator of financial crisis probability over the next four quarters (Chart 5) rose to levels that were well below those observed in the global financial crisis during the COVID-19 crisis period. The indicator is based on a standard early warning logit regression³⁵ weighing the probability of a financial crisis occurring within the next 12 months. It captures developments in non-financial private sector debt sustainability, the real economy and financial markets.³⁶ However, in contrast with the more instantaneous CISS indicator and bank CDS spreads, the indicator of financial crisis probability remained elevated for the most part of 2020, returning to normal levels only at the beginning of 2021. The decrease observed from the beginning of 2021 could possibly be influenced by the brighter economic outlook following the announcement of the COVID-19 vaccines at the end of 2020. It is also worth noting that the cross-country growth dispersion was much less pronounced during the COVID-19 crisis compared to the previous two crises.

The Systemic Risk Indicator (d-SRI in Chart 6) is a broad-based cyclical indicator which captures risks stemming from domestic credit, real estate markets, asset prices and external imbalances (see Lang et al., 2019). The d-SRI has been found to have good early warning properties, reflected in the fact that the level of the d-SRI around the start of financial crises is highly correlated with

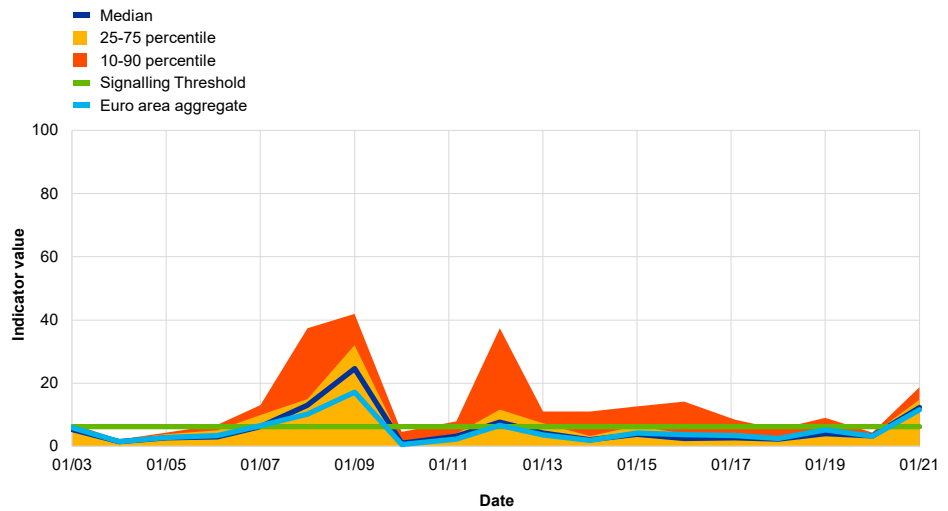
³⁵ The logit model is estimated on quarterly country-level data starting in 1990, covering the 19 euro area countries plus Denmark, Sweden and the United Kingdom. The logit model uses as the left-hand side variable a vulnerability indicator that is equal to 1 during the four quarters ahead of past systemic financial crises. It is set to missing during actual crisis episodes and set to zero otherwise. The identification of systemic financial crises is based on the ECB/ESRB crisis database described by Lo Duca et al. (2017).

³⁶ The variables used in the logit model are: the annual change in the non-financial private sector debt service ratio, the European Commission consumer confidence indicator, the annual growth of equity prices, the realised equity price volatility over the last month, and the risk-free yield curve slope.

measures of subsequent crisis severity, such as GDP declines. This is particularly evident from the peak levels of the d-SRI just before the global financial crisis. In contrast, the d-SRI was relatively low in the period leading up to the COVID-19 crisis, underscoring the fact that this was a health-induced not a financial crisis. However, it is notable that the d-SRI indicator continued to rise even during the COVID-19 crisis, although it still remaining at relatively moderate levels. Among other things, this could reflect heightened debt sustainability concerns.

Chart 5
Financial crisis probability over four quarters

(daily, index)

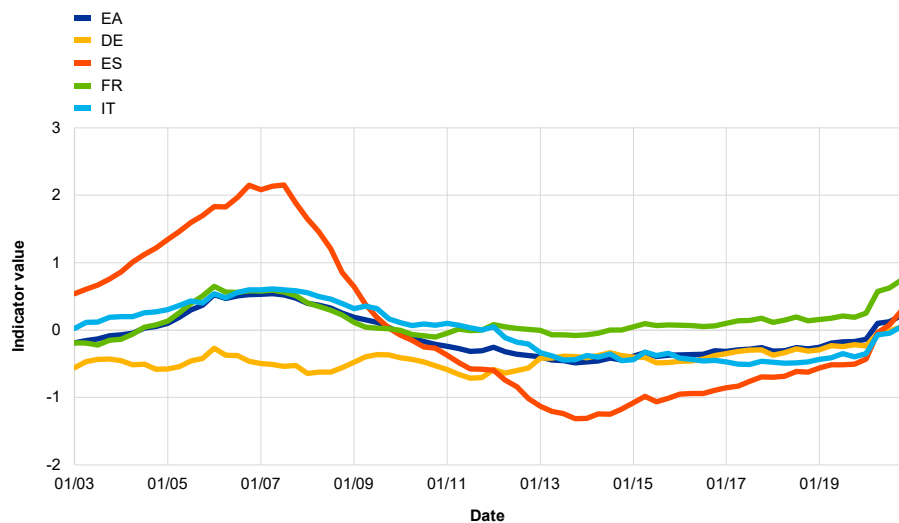


Sources: ECB and ECB calculations.

Note: The financial crisis probability indicator is based on a standard early warning logit regression to assess the probability of a financial crisis occurring within the next 12 months.

Chart 6
d-SRI indicator

(quarterly)



Sources: Lang et al. (2019) and ECB calculations.

In regard to financial fragmentation, the Price-Based Indicator of Financial Integration (FINTEC, Chart 7) has tended to increase during boom times – when fragmentation is lower - and to decline during periods of financial distress when cross-border financial intermediation is often reduced. This, again, was evident in the high levels observed in the FINTEC indicator in the years leading up to the global financial crisis and in the sharp falls during the subsequent crisis years, and the indicator bottomed out in late 2012/early 2013. When the COVID-19 crisis broke out, financial markets in the euro area were immediately put under extraordinary stress, leading to an initial sharp fragmentation.³⁷ This was also reflected in an immediate steep decline in the FINTEC indicator, which was subsequently quick to recover and return to its pre-crisis level.

Chart 7
FINTEC indicator



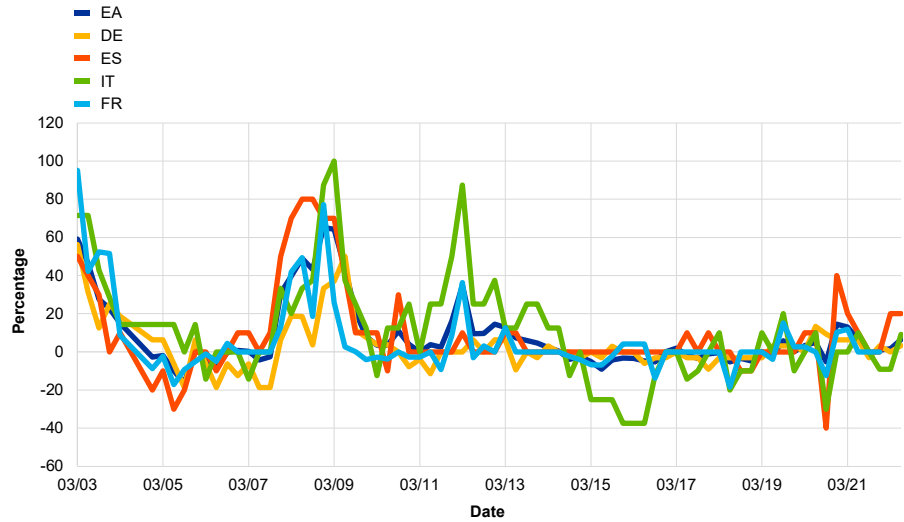
Sources: ECB and ECB calculations.

In the provision of credit to the real economy during each crisis, several different features also stand out. Bank credit conditions, as reflected by (corporate) loan growth (Chart 9) and changes in credit standards (Chart 8), tend to be highly procyclical. Hence, credit standards tend to be loose and loan growth to be strong during boom periods (such as in the run-up to the global financial crisis) and when the crisis hits, loan growth sharply declines amid tightening credit standards and reduced loan demand (for example during the global financial crisis and the sovereign debt crisis). Notable differences were also observed across the major euro area countries, for instance, pre-crisis loan growth and its subsequent correction during the crisis was particularly strong in Spain (and Ireland).

³⁷ Between February and April 2020, the daily version of this indicator posted its second most severe drop during the 2007-21 period; see Borgioli et al. (2020).

Chart 8 Changes in credit standards

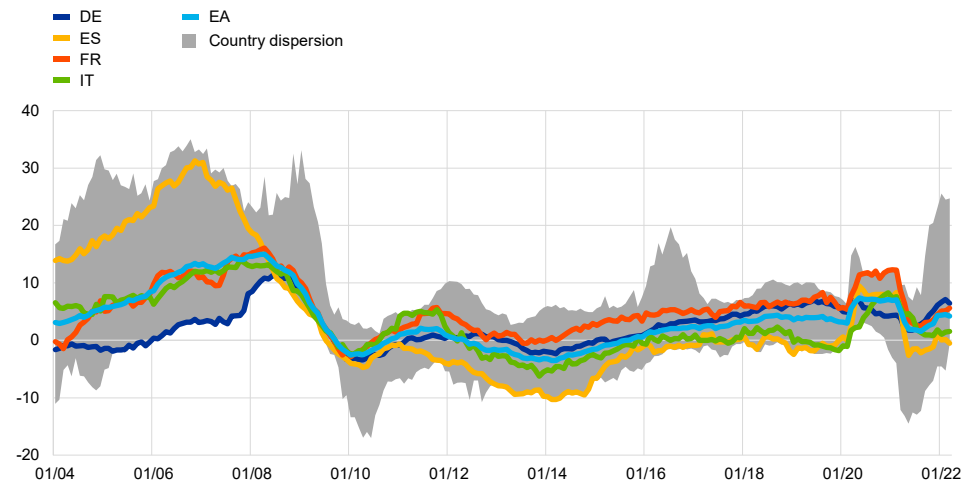
(quarterly, net percentages of banks reporting tightening in credit standards)



Sources: ECB and ECB calculations.

Chart 9 MFI loans to NFCs

(monthly, annual percentage changes)



Sources: ECB and ECB calculations.

Notes: Loans adjusted for sales, securitisation and cash pooling activities, not seasonally adjusted. The country range is calculated as the minimum/maximum over a fixed sample of 12 euro area countries. NFCs stands for non-financial corporations; MFI stands for monetary financial institution.

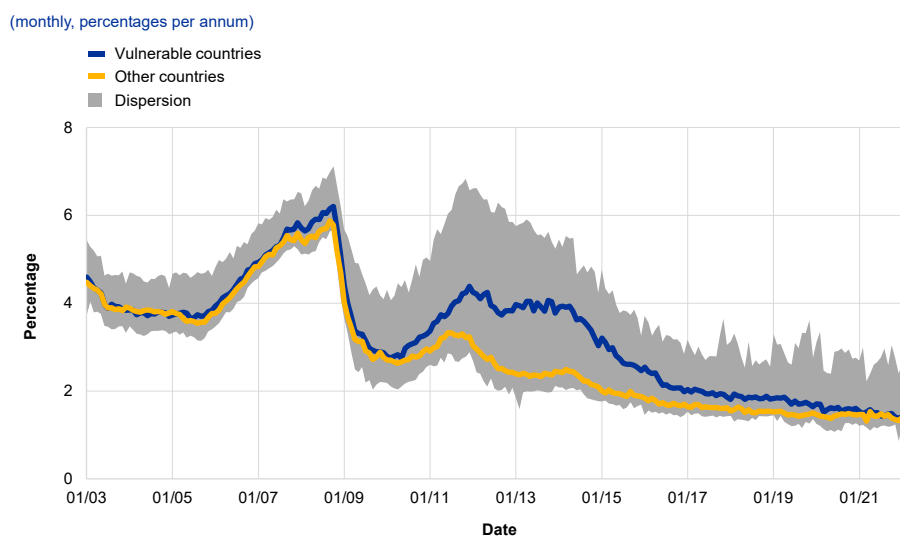
In recent years, loan growth has been robust, supported by the very accommodative monetary policy measures in combination with fiscal support (i.e., public guarantees, direct aids, and others). Notably, corporate³⁸ loan growth remained solid and positive in 2020 (Chart 9) even as the COVID-19 crisis unfolded and despite the temporary tightening of credit standards (Chart 8). This resilience in lending activity, in spite of the unprecedented negative shock to economic activity in 2020, can be ascribed to the exceptional policy support measures, ranging from further monetary policy accommodation (e.g. PEPP and TLTRO III), various fiscal measures (e.g. State guaranteed loans, moratoria), as well as the relaxation of a number of prudential requirements.

Likewise, corporate lending rates in the decade after the global financial crisis saw a gradual decline to historically low levels, in line with the reduction of policy rates and other monetary measures aimed at easing financing conditions (Chart 10). At the same time, especially during the sovereign debt crisis, notable cross-country dispersion was observed, reflecting the differences in sovereign yields spilling over to retail lending rates, which resulted in particularly high lending rates in more vulnerable countries.

Since late 2012/early 2013 lending rate dispersion has gradually reduced in line with fiscal consolidation in the euro area countries worst affected by the sovereign debt crisis, continued monetary accommodation as well as the return of economic growth. However, during the recent COVID-19 crisis, lending rate dispersion across euro area countries remained unchanged compared to pre-crisis levels. Again, this was probably a reflection the effectiveness of the various policy measures to support banks and their corporate borrowers.

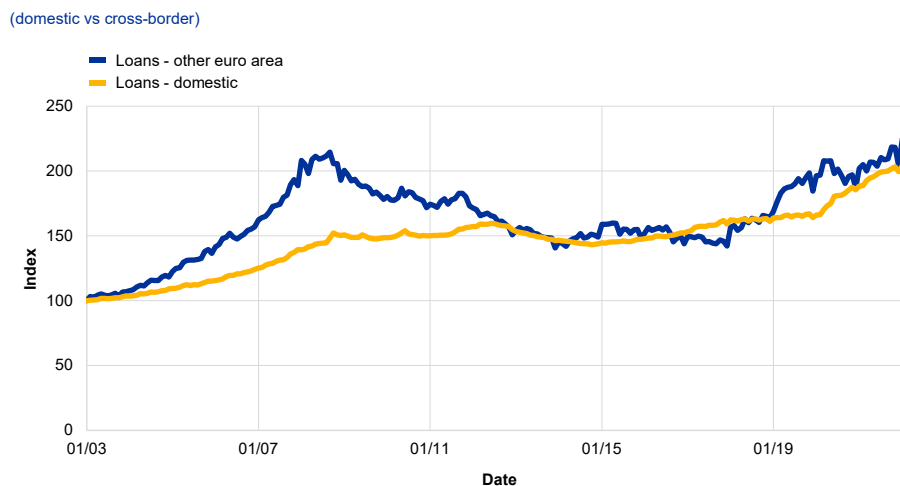
³⁸ We here focus on corporate credit provision. However, credit to households displayed broadly similar patterns. The hump observed in 2020 is related to precautionary lending wanting to benefit from favourable conditions offered through state guarantees.

Chart 10
MFI lending rates to NFCs



Sources: ECB SDW and ECB calculations.
 Notes: Indicator computed by aggregation of short and long-term rates, using a 24-month moving average of new business volumes. Vulnerable countries are IE, GR, ES, IT and PT. Other countries are BE, DE, FR, LU, NL, AT and FI. Within each country group, national rates are aggregated using 24-month moving averages of new business volumes as weights. At the beginning of the sample, weights are fixed at the first computable value. The cross-country dispersion displays the minimum/maximum range after trimming the two extreme values.

Chart 11
MFI loans to NFCs



Sources: ECB and ECB calculations.

A somewhat similar pattern was observed both during the global financial crisis and the COVID-19 crises in the metric illustrating the relative strength of cross-border versus domestic lending to non-financial corporations (Chart 11). Cross-border lending is observed to have increased relatively strongly in boom periods, only to retract during periods of distress when banks typically deleverage their non-core businesses while shielding domestic lending relationships. This was particularly notable before, during and after the global financial crisis. Interestingly, a similar pattern can be observed to some extent during the first year of the more

recent COVID-19 crisis. Even though it may still be too early to draw firm conclusions, it seems as though this development has reverted since the beginning of 2021. The fact that during the COVID-19 crisis domestic lending increased relative to cross-border lending could be related to policy support measures targeting the loan market. Measures such as State guarantees or loan moratoria were primarily (if not exclusively) focused on supporting domestic borrowers.

Overall, the synthetic indicator-based analysis presented above suggests that financial distress was significantly more contained and credit provision more resilient in the COVID-19 crisis compared to the two preceding major crisis episodes. At least part of this beneficial outcome can possibly be ascribed to the reformed institutional set-up of European prudential supervision, including the unification of banking supervision with ECB at the centre.

4 Role of the new financial architecture in the COVID-19 crisis response

This section describes how the combination of micro- and macroprudential measures taken during the COVID-19 crisis complemented simultaneous monetary and fiscal policy responses and achieved a more effective policy mix than in previous crisis episodes. Two of the main arguments for creating banking union by setting up the SSM were to create a level playing field for banks and support delinking the nexus between banks and their sovereigns, which had proved to be pernicious during the sovereign debt crisis resulting in a “doom loop”, where distressed banks and/or sovereigns fed on each other in vulnerable countries.

An argument often made is that the COVID-19 crisis has been a litmus test for the SSM. The speed and concerted manner with which the supervisory measures reviewed above and in Panel D were taken early in the crisis stood in sharp contrast with the experiences from the previous crises (global financial crisis and sovereign debt crisis), and significantly contributed to reducing the risks of financial fragmentation and avoiding the credit crunch experienced in those episodes.

A clear indication that the EU’s new financial architecture, underpinned by the banking union in particular but also clearly by the extensive monetary policy accommodation, has helped break the link between bank funding costs and those of their sovereign is shown in Chart 12. It can be observed that the relationship between bank and sovereign CDS spreads over time has become much less pronounced since 2015. This evidence speaks in favour of an effective conduct of the ECB’s supervisory tasks and its operational independence from political pressure, which had been one of the goals and arguments for entrusting the central bank with microprudential supervision.

While this does not allow firm conclusions about causality to be drawn, it does seem to corroborate the empirical findings by Altavilla et al. (2020) suggesting that supranational banking supervision reduces excessive risk taking by banks.³⁹ In the same vein, as argued by Ampudia et al. (2019), a large central supervisor can take advantage of economies of scale and scope in supervision and gain a broader perspective on the stability of the entire banking sector, which should result in improved financial stability (see also Maddaloni and Scopelliti, 2019).

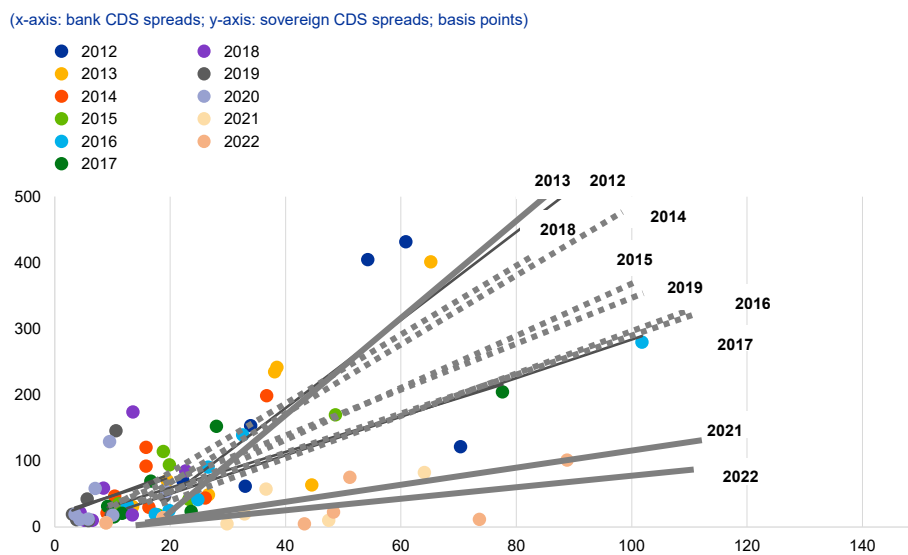
Therefore, the new centralised structure for banking supervision (SSM) entails significant benefits in terms of fewer opportunities for supervisory arbitrage by banks and less informational asymmetry, which may in turn have led to greater supervisory scrutiny and intrusiveness, entailing a more differentiated pricing of bank CDS (see also Georgescu et al., 2017; and Kok et al., 2021). Furthermore, both the ECB’s 2020 vulnerability analysis and the EBA/SSM 2021 stress test confirmed that most euro area banks are resilient even in very severe adverse

³⁹ See also Haselmann et al. (2022).

scenarios, capturing uncertainties surrounding the COVID-19 pandemic (European Central Bank, 2020, 2021).

Chart 12

CDS spreads of banks and sovereigns in the SSM area – by year

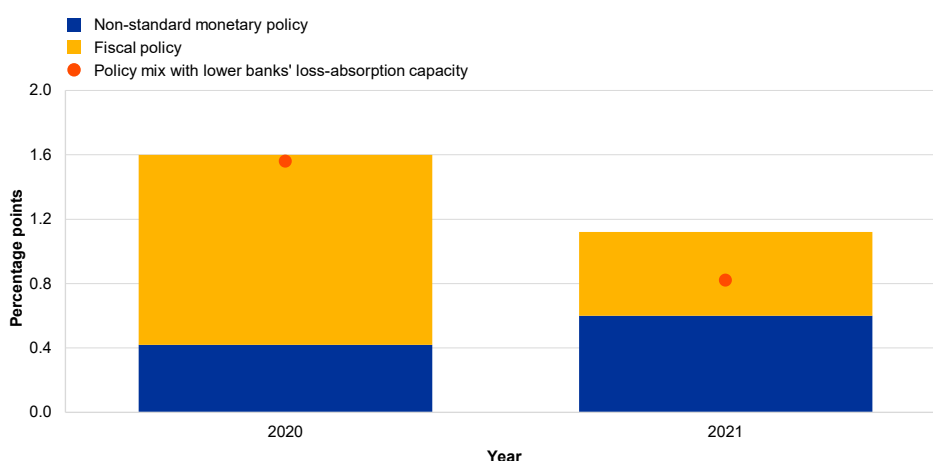


Sources: ECB, Bloomberg and ECB calculations.
 Notes: Banks' CDS prices are shown as value-weighted averages per country and year for the list of significant institutions directly supervised by the ECB, as published in May 2021. The dotted lines reflect the trendline for each year.

Chart 13

Model-projected real GDP growth

(percentage point deviation from the baseline)



Sources: Kok and Rancoita (2020), box in the May 2020 ECB Financial Stability Review. Simulations based on Darracq Pariès et al. (2011, DKR model).

Notes: The illustrative fiscal policy response abstracts from the effect of automatic stabilisers and off-budget items such as state guarantees on loans. The policy mix simulation with lower bank loss-absorption capacity evaluates the same fiscal and non-standard monetary policy measures but assumes tighter bank capital constraints so that banks would resist any temporary decline in net interest income through less accommodative lending policies.

A crucial feature of the response to the COVID-19 crisis was the rapid deployment of combined policy responses. The timely fiscal easing supported the income of households and firms, while central bank asset purchase and liquidity

operations eased financing conditions for all economic agents. For example, the combined impact of a debt-financed fiscal impulse and central bank asset purchases could, according to model simulations by Darracq Pariès et al. (2020), support real GDP by 2.7 percentage points in 2020-21 (see Chart 13).⁴⁰

However, the financial policy relief measures would help attenuate the economic impact of the pandemic by reducing procyclicality. Altavilla et al. (2020) provide empirical evidence that the prudential measures stimulated lending and thus supported the monetary policy stimulus.⁴¹ Combining the effects of the announced prudential capital relief measures, the measures to retain capital through dividend restrictions and the relaxation of IFRS 9 accounting rules, model-based simulations by Darracq Pariès et al. (2020) suggest that prudential policy, in parallel, reinforced the transmission of fiscal and monetary actions. Without the relief measures described above, the ability or willingness of banks to absorb losses without constraining credit would be significantly lower.

With tighter bank capital constraints, the same fiscal and non-standard monetary measures could have yielded a smaller expansionary effect, notably in 2021, as banks reacted to the downward pressure on their net interest income stemming from the central bank asset purchases and loan moratoria (see Chart 13). However, this adverse effect on interest income is second order compared to the positive general equilibrium effect of having supported the economy and prevented large losses. In the same vein, model simulations by Rancoita et al. (2020) indicate that the contributions of prudential policies are more evident in Spain and Italy where banks' management buffers⁴² were relatively smaller and would have been eroded by more losses as the pandemic had a stronger economic impact, and smaller alternative mitigating measures such as direct support, tax deferrals and short-time working schemes were in place. Capital buffers are a key element of the regulatory framework, inter alia aimed at enabling banks to absorb losses while maintaining the provision of key services to the economy. Although buffers are intended to be used in a crisis, anecdotal evidence suggests that banks can be unwilling to draw them down as needed, with potentially adverse effects for the economy (see Behn et al (2020)).

⁴⁰ Note that this fiscal policy response does not include the effects of automatic stabilisers, or off-budget measures, such as the various State guarantee schemes and equity injections.

⁴¹ Altavilla et al. (2021) find that the combined the funding cost relief from the TLTROs and the capital relief from the prudential relaxation measures “bears the potential to forestall an employment decline in the corporate sector over the next two years of 1.4%, equivalent to more than one million workers.”

⁴² The voluntary capital that banks hold on top of regulatory and prudential requirements.

5 Concluding remarks and direction for further research

This paper has tracked the main regulatory and supervisory reforms in the EU and the euro area vis-à-vis the unfolding of three crises: the financial turmoil in mid-2007 and the 2008 global financial crisis, the euro area sovereign debt crisis in 2010-12, and the ongoing COVID-19 crisis that started in early 2020. Briefly, some of the main financial reforms include the Single Regulatory Framework (Single Rule Book), the implementation of Basel III in Europe, the establishment of the ESFS, and ultimately the banking union with the SSM and the SRB (but not an EDIS as yet).

Against the backdrop of the changing financial framework, we have compared the three crises in terms of their severity and duration of financial distress, as well as bank credit developments. One overarching lesson is that it has proved to be a good idea to entrust microprudential supervision to the ECB by setting up the SSM. However, this provides only part of the picture as the path towards banking union was supported by institutional innovations as well as governance changes from mid-2007 onward. These reforms also led to an enlargement of the ECB's tasks and responsibilities, beyond monetary policy, to encompass shared macroprudential powers. Since early 2020, we have witnessed timely fiscal easing that has supported the income of households and firms, while central bank asset purchase and liquidity operations have eased financing conditions for all economic agents.

In the second part of the paper, we have shown how these reforms and combined policies helped to taper the sovereign-bank doom loop, improve the overall resilience and resolvability of the EU banking sector and make it better able to withstand the ongoing large shocks while continuing to finance the real economy. The COVID-19 crisis has been characterized by the positive interaction of rapid fiscal and monetary responses (macro policies) and joint financial and supervisory responses. In this new policy environment, the advancement in governance and financial architecture in the EU and the euro area enabled policy makers and regulators to counter the COVID-19 crisis with a swift and concerted crisis response. Information-related synergies between the ECB's mandates (fully respecting the strict "separation principle") enabled it to counter the crisis with a coordinated, mutually-reinforcing, concerted and ultimately effective crisis response for both roles of the ECB. Indeed, this has also been observed more recently in the context of the unfolding crisis related to the Russian invasion of Ukraine which likewise sparked a swift and coordinated crisis-response by the ECB/SSM including a desk-top vulnerability analysis assessing banks' resilience to the new situation (see ECB, 2022a-b; Enria, 2022).

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