The fiscal dimension of monetary policy and central bank autonomy: lessons from two crises

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The global decline in the natural rate of interest that has been documented in the 21st century constrains the monetary policy accommodation that can be provided with lower policy rates during a crisis. Twice already during this century, following the 2008 global financial crisis (GFC) and more recently the 2020 pandemic, the zero lower bound (ZLB) has posed a significant monetary policy challenge. Under such circumstances, the activation of balance sheet policies, such as quantitative easing (QE) and more accommodative fiscal policy supported by QE, can substitute for unfeasible policy-interest-rate reductions. When the natural rate of interest is low, fiscal-monetary policy interactions are more pronounced, suggesting the need for better cooperation between independent central banks and fiscal authorities, despite the wariness of central bankers concerned about compromising their autonomy.

This article compares and contrasts the policy responses of the Fed (Federal Reserve) and the ECB (European Central Bank) in the two crisis episodes, and the resulting economic outcomes, in order to draw lessons about the strategy of monetary policy and how to conduct it.[1] The comparison highlights the importance of the fiscal dimension of monetary policy and the potential pitfalls when the synergy of fiscal and monetary policy is neglected by an independent central bank. The

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appropriate policy response to both crises required expansionary fiscal and expansionary monetary policy. Judging from subsequent developments in prices, in the aftermath of the GFC policy proved less expansionary than was necessary to support 2% inflation – the definition of price stability adopted by both central banks. In addition, in the euro area, an impairment in the transmission of monetary policy resulted in the cost of refinancing government debt diverging markedly across Member States. This led to an excessively tight fiscal-monetary policy mix in several euro area Member States. Beyond the resulting severe economic consequences, this threatened the political viability of the European Project. Overall, the euro area experienced a much deeper and more protracted slump than was observed in the United States. In contrast, when responding to the pandemic, fiscal and monetary policy has been more expansionary in both economies, preventing a protracted slump, and ECB policy has been more successful in containing the impairment in the transmission of policy across Member States.

For the ECB, two critical changes in its monetary policy response led to the notably better outcomes in the aftermath of the pandemic. In contrast to the hesitation it exhibited in 2008, the ECB expanded its balance sheet more appropriately in 2020 with decisive purchases of long-term government debt. This expansion was comparable to the expansion of the Fed's balance sheet. Furthermore, the ECB suspended elements of its policy framework that had impaired the functioning of government debt markets, such as the reliance on credit rating agencies for determining the eligibility of government debt for monetary operations and self-imposed restrictions on QE. By protecting government bond markets from the self-fulfilling adverse equilibria that the ECB had tolerated in the aftermath of the GFC, the ECB supported refinancing government debt at lower cost in the entire euro area, instead of only in selected Member States. This facilitated more expansionary fiscal policy in all Member States, better supported the recovery, and protected against the further fragmentation of the euro area.

ECONOMIC DEVELOPMENTS

Charts 1 (below) compare the price level in the United States and the euro area, using the preferred metrics of the two central banks – the personal consumption expenditures (PCE) price index for the Fed and the harmonized index of consumer prices (HICP) for the ECB. The top panel compares the price indexes with a constant 2% inflation path that corresponds to the current definition of price stability for the two central banks. The bottom panel shows deviations of the price level from the constant 2% inflation path, facilitating visual examination of periods when inflation deviated from 2% over multi-year intervals. The

starting point for the 2% constant inflation path shown in the charts is December 1998, marking the beginning of common monetary policy in the euro area. Charts 2 (below) present data on the unemployment rate. The top panel compares the economies of the US and the euro area, while the bottom panel shows developments in the four largest economies within the euro area.[2]

Charts 1
Price Level and Price Gap

Chart 1a
Price Level: US, Euro Area and Constant 2% Inflation

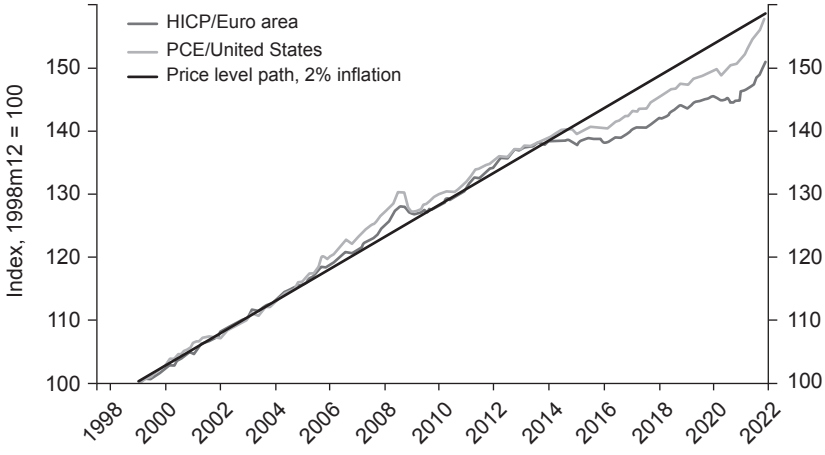
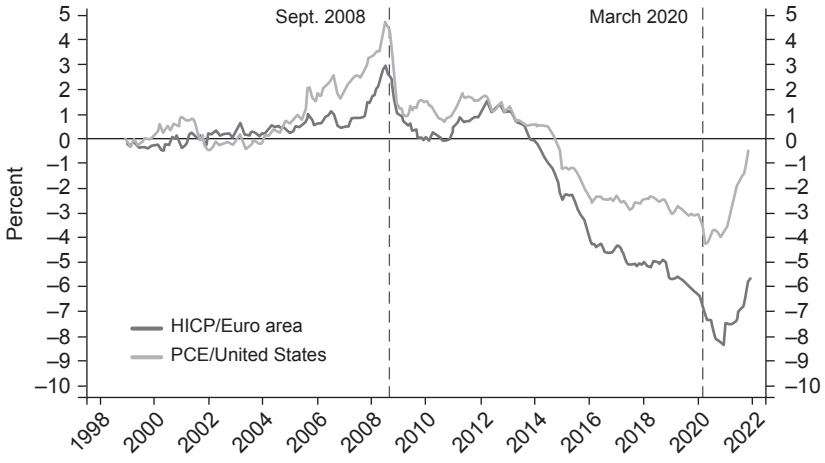


Chart 1b
Price Gap: Deviation of Price Level from Constant 2% Inflation Path



Sources for both charts: Federal Reserve Bank of St Louis; FRED; ECB SDW; author's calculations.

Charts 2
Unemployment Rate

Chart 2a
US and Euro Area

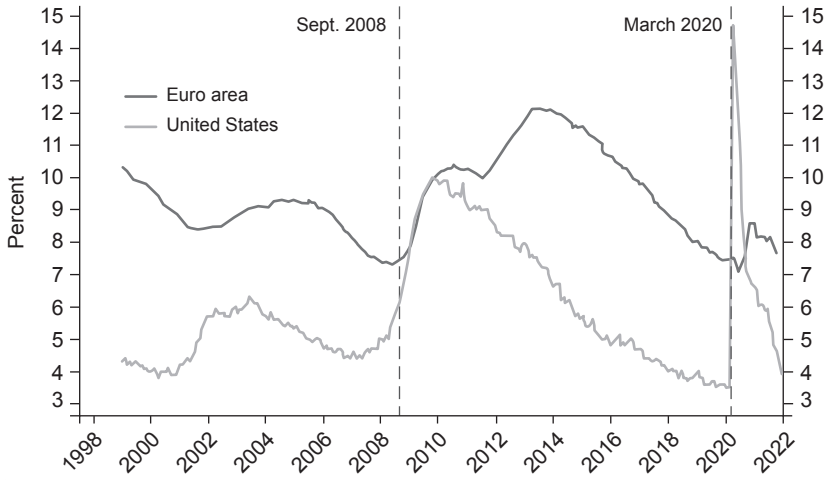
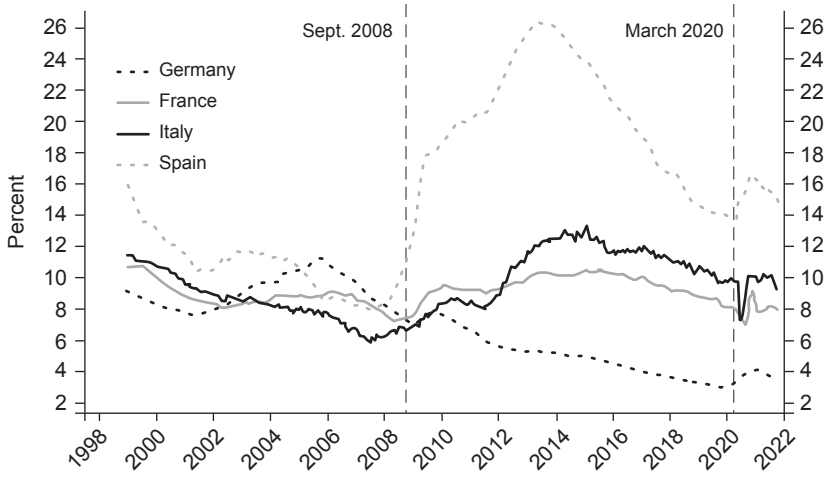


Chart 2b
Four Largest Euro Area Member States



Sources for both charts: Federal Reserve Bank of St Louis; FRED; ECB SDW.

The US and euro area economies faced similar challenges relating to maintaining price stability in the 2000s. In the first half of the decade, inflation remained close to 2%. Prices subsequently started rising faster, suggesting some overheating of the economy before the GFC, although part of this increase reflected energy price inflation, which was

expected to abate. With the financial crisis, the situation changed abruptly. Economic activity declined, leading to an increase in the rate of unemployment and disinflation that returned the price level closer to the constant 2% path it had followed in the first half of the decade.

In the United States, the unemployment rate peaked at 10% in October 2009, and then started a gradual, but persistent decline. The recovery was slow. Unemployment only returned to its 4.4% pre-recession low in 2017. Nonetheless, the economic recovery and the decline in the unemployment rate continued until 2020, when the pandemic started. In the euro area, the unemployment rate, which had reached a cyclical low of 7.3% in June 2008, rose to a peak of 10.4% in July 2010 before starting to decline. The increase in unemployment was smaller than that in the US. However, soon after the recovery was interrupted. A sharp tightening of fiscal and monetary conditions while the recovery was underway pushed the economy into a second recession. After falling to 10% in July 2011, the unemployment rate started to rise again, reaching 12.1% in Spring 2013. The recovery from this second recession was exceedingly slow, with the unemployment rate in the general euro area remaining in double digits until late 2016 and staying above its pre-GFC cyclical low until the pandemic.

In the aftermath of the GFC, only the euro area among advanced economies was hit by a double-dip recession. While the 2008-2009 recession originated in a financial disturbance that led to a broadly similar downturn in both the euro area and the US economies, and elicited a broadly similar fiscal and monetary policy response, the 2011-2013 recession was policy-induced and limited to the euro area. The average performance of the euro area in the top panel of charts 2 (above) obscures a troubling development that is clear in the bottom panel. Within the euro area, the recovery continued uninterrupted in some Member States, notably Germany, whereas in other Member States, such as Italy and Spain, the second, policy-induced recession was more severe than the one caused by the GFC in 2008. In fact, fiscal and monetary policy continued to support recovery in some Member States while favoring sharp contractions in others.

After the GFC, prices rose somewhat less than 2% on average in both the US and the euro area. By January 2020, right before the pandemic started, the price level in the United States was about 3.1% below the constant 2% inflation path. In the euro area, the gap was larger. Prices where about 6.3% lower than the steady 2% inflation path.

The shock associated with the pandemic led to a sharp contraction in economic activity. As a result of the disinflationary pressures in the first months of the pandemic, the price level gap dropped further in both economies. Similar to the GFC, the pandemic led to monetary

and fiscal easing that supported the recovery. This time, policy accommodation was more forceful than had been the case in the aftermath of the GFC and recovery was faster both in the US and in the euro area. Within the euro area, fiscal and monetary policy were similarly supportive in all Member States, avoiding a further divergence beyond that observed in the aftermath of the GFC.

The deliberate shutdown of parts of the economy during 2020 resulted in a sharp temporary drop in effective employment in both economies, but this was not similarly reflected in the official unemployment rate data, due to differences in the manner in which fiscal support was provided. In the euro area, many employees who could not work continued to be recorded as employed. The unemployment rate, which stood at 7.4% at the start of 2020, peaked at just 8.6% in November. It then declined to close to its pre-pandemic level by the end of 2021. In contrast, in the United States, the unemployment rate rose sharply from 3.5% at the start of 2020 to 14.7% in April, and then rapidly declined to 3.9% by the end of 2021. The quick recovery during 2020-21 was also reflected in GDP data. In the United States, real GDP returned to its pre-pandemic level by 2021Q1. In the euro area, GDP nearly reached its pre-pandemic level by 2021Q3.

The fast recovery from the pandemic reversed the deflationary pressures observed in Spring 2020. During 2021, inflation rose faster than had been anticipated, in part reflecting the expansionary policy measures, but also reflecting pandemic-related supply bottlenecks and higher energy prices. By the end of 2021, these developments nearly closed the price gap in the United States, bringing the price level in line with the level corresponding to 2% inflation. In the euro area, where inflation had been lower before the pandemic, the increase in inflation during 2021 closed only part of the price gap. In December 2021, the price level was still 5.6% below the level corresponding to steady 2% inflation.

INTEREST-RATE AND BALANCE-SHEET POLICIES

Charts 3 (below) present a summary view of Fed and ECB monetary policy as reflected in overnight interest rates and the size of their balance sheets. The charts point to several differences in the monetary policy response to both crises. Nevertheless, a striking similarity is evident in the response to the pandemic. With interest rate policy constrained, both central banks engaged in unprecedented quantitative easing. During 2020 and 2021, the Fed and the ECB expanded their balance sheets by about 4 trillion dollars and 4 trillion euro, respectively, mostly with massive purchases of long-term government debt – the canonical form of QE. Compared to the GFC, this represented a significant

change in the willingness of the two central banks to engage in balance sheet policies. Prior to the GFC, such a policy reaction would have been unthinkable. Nonetheless, it was incredibly effective for containing the adverse economic impact of the pandemic. To understand the rationale behind the policy response to the pandemic, it is instructive to study in more detail the reasons for the slow recovery and low inflation after the GFC and, in the case of the ECB, the reasons for the severe impairment of policy and divergence of outcomes within the euro area.

Charts 3
Monetary Policy

Chart 3a
Overnight Interest Rates

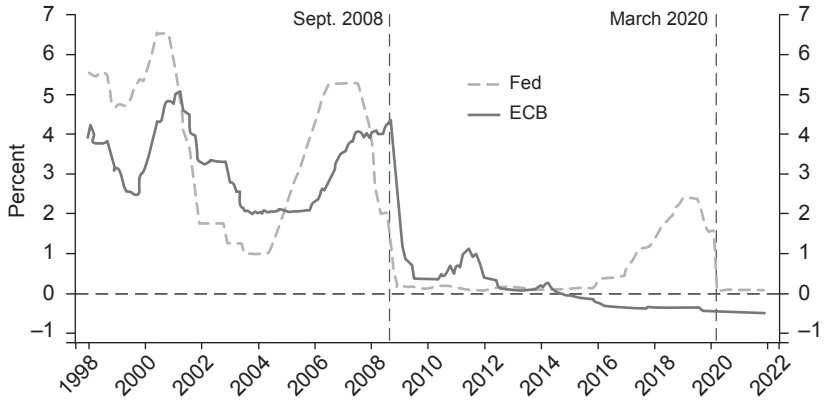
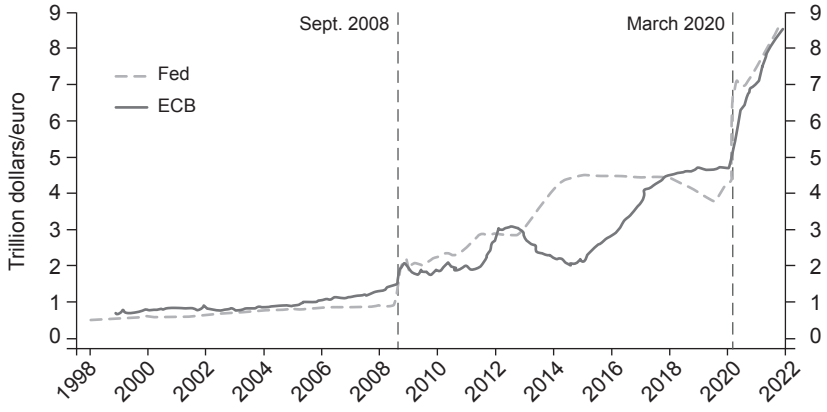


Chart 3b
Size of Central Bank Balance Sheet



Note: the interest rates plotted for the Fed and ECB are the federal funds rate and Eonia, respectively.

Sources for both charts: FEDERAL Reserve Bank of St Louis, FRED; ECB SDW.

Following the September 2008 shock, monetary policy was initially eased by both central banks. Overnight interest rates were reduced to zero. In light of the constraint in policy rates posed by the ZLB, both central banks also expanded their balance sheets somewhat. However, monetary policy easing was not similarly sustained in order to support recovery in both economies. In the United States, the Fed consistently kept interest rates at zero and expanded its balance sheet in three phases, until 2015. The Fed started a gradual policy normalization only after it was able to assess with confidence that the recovery was nearly complete. Despite this caution, in retrospect policy proved somewhat tighter than would have been necessary to guide inflation to 2%.

One reason why policy proved somewhat tighter than would have been desired relates to misperceptions regarding the natural rate of interest, r*. Policymakers were slow to recognize the magnitude of the decline in r*. Since 2012, Fed policymakers have made their estimates public, so we can quantify these misperceptions since then. In 2012, the median estimate among Fed policymakers exceeded 2%. By the end of the decade, this had declined to just 0.5%. Alternative estimates available before the pandemic suggested r* could well have been lower – zero or even somewhat below zero.

For much of the 2010s, policy was formulated with a higher estimate of r* than policymakers would have wanted to use had they more quickly recognized the extent of the decline in r*. Consequently, policy was less accommodative than intended. Discrepancies of this nature lead to biases in projections. Examining the Fed's inflation projections confirms that during this period inflation outcomes were somewhat lower than the projections. At the policy-relevant horizon (about 2 years ahead) inflation projections were close to 2%. Fed policy was calibrated to guide inflation to 2%. Inflation turned out to be somewhat lower, because it took time for policymakers to appreciate the magnitude of the reduction in the natural rate of interest.

Contrary to the Fed, ECB policy was not consistently accommodative for the euro area as a whole, and proved exceptionally restrictive for several Member States in the aftermath of the GFC. In what proved to be premature tightening, policy interest rates were raised in 2010. This tightening was reversed in late 2011, but policy remained too tight, as balance sheet policy also proved to be problematic. The expansion of the balance sheet that had started in late 2008 was reversed between 2012 and 2014, even while the euro area economy was in recession, thus creating disinflationary pressure that hampered growth. Only in 2015 did the ECB start implementing canonical QE – expanding its balance sheet systematically through purchases of long-term government debt. Earlier, it had hesitated to adopt this policy in the face of

criticism by politicians and legal challenges in some Member States, notably Germany. Despite its independence, in the face of this criticism, the ECB opted to pursue a policy of "lowflation". It started implementing QE only in 2015, in the face of outright deflation risks for the euro area as a whole. Even then, and systematically before the pandemic, the ECB avoided implementing QE at the pace needed to guide inflation to 2%.

QE provides easing in two ways when the ZLB limits further reductions in short-term interest rates. The direct channel operates by reducing longer-term interest rates, and boosting prices of equity and other assets. This channel reduces the costs of funding consumption and investment, boosting aggregate demand. QE also operates through an indirect fiscal channel. By compressing the term premium on long-term government debt, QE reduces the cost of refinancing government debt from what the cost would be without QE and creates additional fiscal space for the government. In effect, by reducing the cost of refinancing government debt, QE enables a more expansionary fiscal policy stance without a deterioration in the fiscal position of the government.

This fiscal dimension of QE suggests the need for greater coordination of fiscal and monetary policy at the ZLB, despite the wariness of central bankers concerned about compromising their autonomy.

IMPAIRMENT OF THE ECB MONETARY POLICY TRANSMISSION AND ITS FISCAL IMPLICATIONS

The monetary policy transmission mechanism depends crucially on the influence of policy actions on the term structure of interest rates on safe assets with minimal credit risk. Debt markets may be characterized by multiple expectational equilibria: The same underlying fiscal fundamentals can support a risk-free equilibrium consistent with minimal credit risk or self-fulfilling risky equilibria with considerable risk of default. The risky equilibria correspond to higher interest rates on government debt, reflecting compensation for the risk of default. In advanced economies with well-functioning central banks, government debt is considered a safe asset because when faced with any market disruption, the central bank acts to support the most favourable of the multiple expectational equilibria over less favourable ones.

It has been taken for granted that this will be done by the central banks in all advanced economies, including the Fed, with one exception since the GFC: the ECB.

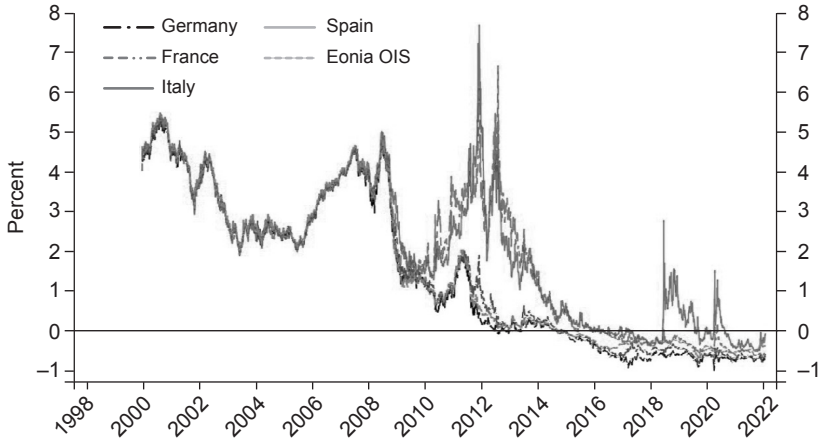
Before the GFC, the government debt of all Member States in the euro area was considered a safe asset. Differences in yields on euro-

denominated government debt were small, and ECB monetary policy could be smoothly transmitted in a similar fashion in all Member States. Unfortunately, in the aftermath of the GFC, the ECB deviated from that policy. Since then, the euro area government bond markets have experienced occasional crises, with corresponding disruptions in the monetary policy transmission mechanism.

These disruptions have been responsible for divergences of government bond yields within the euro area, which has been reflected in tighter fiscal-monetary conditions in "weaker" states and easier conditions in states that are perceived to be "stronger", either because they can exert relatively greater political influence or because they are more fiscally sound.

An illustration of these disruptions is presented in chart 4. The chart compares the 2-year government bond yields for the four largest euro area Member States with the 2-year Eonia overnight indexed swap (OIS) rate. The 2-year OIS rate is a market rate that closely tracks expectations of ECB interest rate policy over 2 years. With smooth monetary policy transmission, the 2-year government bond yields of all Member States should be very similar to the OIS rate. The chart confirms that the bond yields of all four Member States moved together with the OIS rate before the GFC. Subsequently, however, several disruptions have occurred. The most intense of these disruptions were observed in 2011-2012, but a smaller disruption was seen as recently as 2020, in the first weeks of the pandemic.

Chart 4
2-Year Government Bond Yields and Eonia OIS Rate



Sources: Bloomberg; Daily data.

The cause of this fragility is a fundamental flaw embedded in the ECB's policy implementation strategy that became evident only after the GFC, when governments of some euro area Member States started nurturing doubts about the creditworthiness of the sovereign debt of other Member States.[3] Unlike all other central banks, since the GFC the ECB has effectively delegated the determination of eligibility of government debt for its monetary and credit operations to private credit rating agencies. As a rule, when the government debt of a Member State has a rating above a pre-determined threshold, it is considered eligible for ECB operations. If not, it is ineligible. Loss of eligibility excludes a Member State from QE. More importantly, it makes government debt ineligible to serve as collateral in credit operations. This diminishes the liquidity premium government debt would otherwise enjoy and raises bond yields. Perceptions that collateral eligibility may be lost make financial institutions less willing to roll-over their holdings of maturing debt. This induces a substitution towards government debt of Member States with higher ratings, widening spreads within the euro area. Relying on credit rating agencies to determine eligibility introduces a destabilizing cliff effect in the ECB collateral framework that gives rise to multiple self-fulfilling expectational equilibria. This practice sows the seeds of debt roll-over crises and defaults that would not otherwise arise.[4]

Indeed, since the GFC the ECB has been a source of unnecessary fragility in euro area sovereign debt markets that could be eliminated if a better policy implementation strategy were adopted. The ECB failed to acknowledge the role of its own policies in compromising the safe asset status of euro area government debt and how its policies and communication contributed to the tightening of fiscal and monetary conditions in the euro area. Instead, ECB communication reinforced concerns about fiscal unsustainability and validated the convergence of market-participants' beliefs in adverse self-fulfilling equilibria. It also advocated counterproductive austerity policies. An example of these messages, presented at the conclusion of the Governing Council meeting on 2 December 2010, is characteristic: "Turning to fiscal policies, while budgetary developments for some euro area countries are more favourable than expected, concerns about unsustainable fiscal positions and their vulnerability to adverse market reactions remain very high for others and have had repercussions throughout the euro area. In this environment, there is a clear need for the responsible authorities to strengthen confidence in sound public finances, thereby reducing risk premia in interest rates and supporting sustainable growth over the medium term. At the same time, all euro area countries should pursue ambitious and credible multi-year consolidation strategies and imple-

ment fully the planned corrective measures, focusing on the expenditure side. In their 2011 budgets, countries need to specify the necessary fiscal adjustment measures in detail, while standing ready to correct any slippages from the fiscal objectives announced." (ECB, 2010).

Dissecting the sources of this failure is not simple. The incomplete nature of the monetary union and lack of common government created political challenges. Methodological weaknesses played a role. The ECB was slow to recognize the global decline of r* and its beneficial consequences for government debt dynamics. In addition, the ECB was relying on market interest rates for performing debt sustainability analysis instead of focusing on fundamental factors.

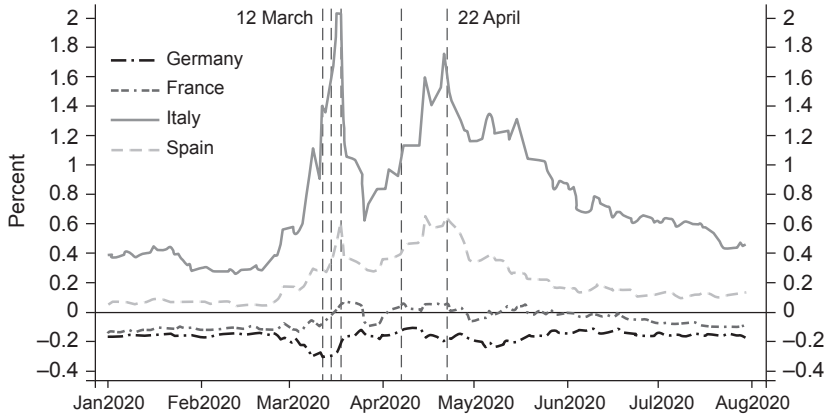
The ECB has recognized that the impairment of its monetary policy transmission hinders its ability to fulfil its mandate. On some occasions, the ECB has intervened to reduce the severity of the impairment, for example with temporary exceptions, and targeted asset purchases. Perhaps the best known such example was the introduction of the OMT programme in September 2012. As then President Draghi explained at the press conference: "We are in a situation now where you have large parts of the euro area in what we call a "bad equilibrium", namely an equilibrium where you may have self-fulfilling expectations that feed upon themselves and generate very adverse scenarios. So, there is a case for intervening, in a sense, to "break" these expectations." (ECB, 2012).

Such interventions have been effective in limiting the impairment of the ECB monetary policy transmission. However, the ECB has avoided correcting, on a sustained basis, the known flaws in its policy implementation strategy that engender the underlying fragility.

The most recent episode of impairment in the ECB's policy transmission occurred in the first weeks of the pandemic. This is evident in the spreads of the 2-year bond yields over the OIS rate in chart 5 (below). The chart marks, with vertical lines, five dates of key ECB policy decisions from 12 March to 22 April. The widening of spreads in early March suggested the risk of yet another major disruption in government bonds markets. Despite easing policy, including the announcement of a new Pandemic Emergency Purchase Programme (PEPP) on 18 March, the disruption persisted.

A major concern among market participants was that the fiscal stress induced by the sharp decline in GDP coupled with the need for fiscal support to address the crisis would likely lead to a series of credit rating downgrades. The cliff effect embedded in the ECB's collateral framework raised the likelihood of yet another debt roll-over crisis. On 22 April 2020, the ECB announced it was suspending this destabilizing

Chart 5
Spread of 2-Year Government Bond Yields Over OIS Rate



Note: vertical lines mark five dates with ECB decisions responding to the pandemic: March 12, March 15, March 18, April 7 and April 22.

Sources: Bloomberg; author's calculations.

element of its collateral framework in order to "mitigate impact of possible rating downgrades on collateral availability" (ECB, 2020). With this decision the ECB protected the eligibility of government debt and averted roll-over debt crises that would have otherwise materialized.

Conclusion

The fiscal-monetary policy response to the pandemic suggests that experience in the aftermath of the GFC led to a greater appreciation of the synergies between fiscal and monetary policy that arise at the ZLB. The decisive use of quantitative easing in Spring 2020 by the Fed and the ECB promoted a faster recovery and protected the economy better from lasting damage than the more timid response pursued during the GFC. By maintaining low refinancing costs for governments, quantitative easing made more expansionary fiscal policies possible.

With its actions during the pandemic, the ECB demonstrated that it has the tools and the authority to support government bond markets better than it did in the aftermath of the GFC. The ECB avoided inducing divergence in monetary and fiscal conditions. The suspension of its reliance on credit ratings was particularly powerful in preventing unnecessary debt roll-over crises that could well have materialized. Drawing on this experience presents an opportunity for more lasting improvement.

As long as the natural rate of interest remains low, central bank policies that ensure the smooth functioning of government bond markets and enhanced cooperation with fiscal authorities will be critical for the effective management of economic downturns.

NOTES

1. The analysis draws on Orphanides (2020, 2021) and Lengwiler and Orphanides (2020).

2. The focus on the four largest Member States is meant to illustrate the divergences within the euro area in a concise manner. For a more detailed analysis, see Lengwiler and Orphanides (2020).

3. The Deauville agreement in October 2010 is a prime example (see Orphanides, 2020, for a detailed explanation).

4. Lengwiler and Orphanides (2021) present a theoretical model of the multiplicity of equilibria induced by the cliff effect. Martin and Philippon (2017) and Consiglio and Zenios (2020) quantify the potential improvement in debt dynamics and economic performance if the ECB were to adopt policies that avert market disruptions.

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