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NEW DOCTRINES  
IN CENTRAL BANKING



# NOTE TO AUTHORS

## *PRESENTATION OF THE JOURNAL*

Founded in 1987, the Journal of Financial Economics (JFE) aims to be an instrument of dialogue between academics, researchers and professionals in finance and banking. It aims to contribute to the discussion and reflection that are essential for the cohesion of the financial and banking professions.

The REF deals with all subjects related to financial economics in the broadest sense: banking economics, corporate finance, market finance, financial history, monetary policy, international finance, etc. It offers a plurality of points of view thanks to the diversity of the authors it hosts.

It publishes four issues per year. Each issue includes a thematic dossier composed of about ten articles, a review section, a financial history column and various articles submitted spontaneously to the journal.

The thematic dossiers are produced under the direction of two pilots chosen by the editorial board for their expertise in the subject. The pilots design the content of the dossier, contact the authors and supervise the scientific quality.

The articles submitted must correspond to the editorial line and meet commonly accepted scientific requirements. They are subject to a double-blind refereeing process.

The referees are appointed according to the topics covered. The editorial staff ensures that submissions are processed as quickly as possible and informs authors of the progress of the process.

The articles published must be readable by professionals, researchers and academics who are not necessarily specialists in the issues addressed. For this reason, mathematical formalisation should be kept to a minimum.

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- a Word file specifying the names, functions and contact details of the authors (email and postal address);
- for each graph, an Excel file containing the data and the graphical representation.

Articles must be original manuscripts that have not been previously published. As long as a manuscript submitted to the journal is under review, authors agree not to submit it to another journal.

Articles should be no longer than 15 pages, including tables, graphs, bibliography and appendices, i.e. approximately 25,000 characters, and contain no more than eight graphs or tables.



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# INTRODUCTION

## LESSONS LEARNED FROM CRISES

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HANS-HELMUT KOTZ\*\*

### *WHY CHANGING MONETARY POLICY FRAMEWORKS?*

Over the last few years, central bankers have developed new strategies of guiding monetary policy. In particular in response to the great financial crisis (GFC), they have been updating their priors. Priors at the time were, to put it very generically, inflation targeting and the control of short-term interest rates, or the policy rate. This was the mainstream, pre GFC orientation, dubbed by Carl Walsh (Walsh, 2003) modern monetary policy (MMP). As such, MMP was a response to its precursor strategies, including the control of monetary aggregates (in their various forms). In the latter case, updating was called for since engineering the money supply via central bank (or high-powered) money in a consistent way had proven to become infeasible in the 1980s. Banking and financial markets had become too innovative, destabilizing the relationship between base money and the broader monetary aggregates.

*Learning by crises.* Typically, it takes a real-world or practical crisis to change policy frameworks. The break-down of the dollar-standard, for example, was the background against which the Bundesbank became “monetarist”, though only pragmatically so (Schlesinger, 1984; Blinder, 1987). Also, when in the 1992 the European Monetary System, in many ways a scaled-down version of Bretton Woods, fell apart, the Bank of England was forced to find a new loadstar. Instead of targeting

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This article presents the authors’ own views.

an intermediate objective (the exchange rate in that case), the BoE (Bank of England) chose to target an ultimate goal: inflation. Subsequently, during the 1990s, inflation targeting became the new mainstream, including in emerging market economies (Truman, 2003).

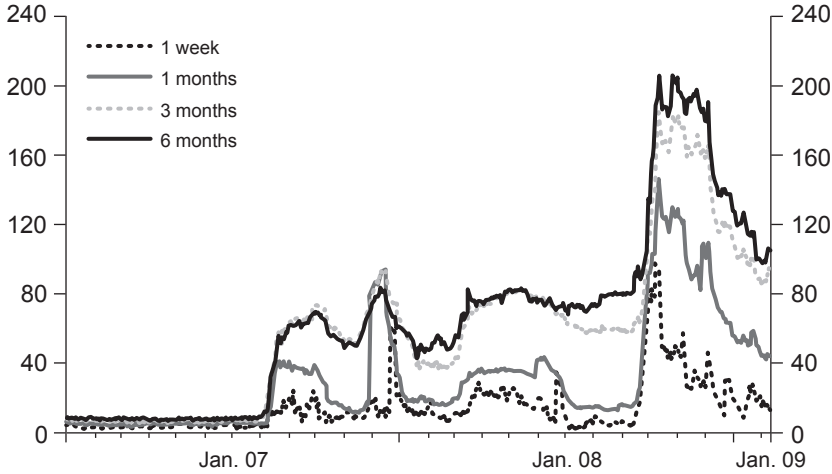
In all the above-mentioned cases, theoretical debates were playing out in the background. At times, new concepts were at hand when old ways of doing things were found wanting. Milton Friedman, for instance, argued that discretionary monetary policy, for a variety of implementational frictions – lags – would end up being counterproductive (Friedman, 1968). Moreover, such policies were relying on fallacious ideas about information processing of wage earners (or their representatives), their assumed money illusion. Instead, monetary policy should take a long-term view, restricting itself on trying to control a nominal variable, with the help of an intermediate target.

Debate means, strong counterarguments had much currency at the time. Of course, James Tobin defended forcefully a different view (Tobin, 1983). And Ben Friedman demonstrated the conceptual lacunae (Friedman, 1975; Friedman, 1994). As concerned *practical* implementation of monetarist policy, Alan Blinder could not distinguish the Bundesbank's (monetarist) approach from discretionary fine-tuning (Blinder, 1987). From a different angle, using policy reactions functions (von Hagen, 1999), one also could not find a statistically significant coefficient for money supply in Bundesbank reaction functions. Embarrassingly, deviations from the “price norm” and the output gap were associated with – caused by? – the observed trajectory of short-term interest rates (see also Kotz, 1994). As an upshot, the Bundesbank had to defend itself against the charge of being a closet inflation targeter (Bernanke and Mihov, 1997).

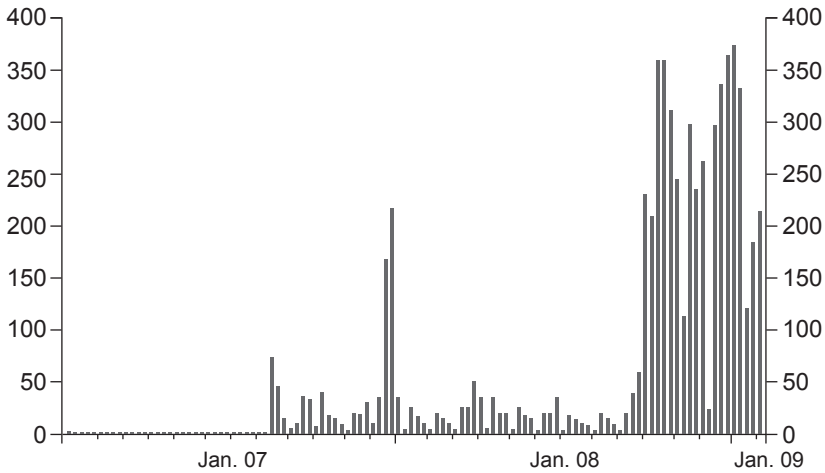
*GFC: a case in point.* On July 27, 2008, a Friday, Bundesbank learned that IKB, a bank with a solidly conservative reputation, apparently focused on serving the upper echelons of Germany's *Mittelstand*, had trouble in rolling over its short-term liabilities. One counterparty, in particular, assessed the bank's off-balance sheet obligations as so risky that it refrained from renewing a credit line. Only one month earlier, at the end of June, the bank had published its annual report, being generally lauded for its convincing performance, achieving a return on equity of about some 20%. An IKB press release from mid-July confirmed the seemingly healthy trend. On that ominous end-of-July weekend, however, a rescue package had to be hashed out, with two more to follow over the next few years.



**Chart 1**  
**Interbank Money Market**  
(in basis points)



**Chart 2**  
**Liquidity Provision Above Benchmark**  
(in Md€)



The chart 1 portrays the evolution of the difference between unsecured and secured interbank lending in short-term money markets. While that difference used to be for overnight loans at about 0.05 percentage points, the spread rose dramatically in early August 2007. The ECB (European Central Bank) responded with refinancing operations substantially above the needs of the banking system. Initially, the amount of additional liquidity provision was perceived as extraordinary, see the bars in the chart 2. But, obviously, conditions in interbank markets – betraying a deep mutual lack of trust – required volumes of refinancing orders of magnitude above the benchmark. Interbank money markets, quite literally, moved on the balance sheet of the ECB.

Source: Statistical Data Warehouse, ECB.

While there were – initially – no public funds involved, the question was whether this was an idiosyncratic event or the harbinger of systemic problems. The ECB responded with deeds and in the affirmative (see chart 1 and 2 above). On August 9, 2007, just after BNP Paribas had made public that it could not value assets in two of its large funds invested in structured credit products, the ECB provided additional liquidity to its counterparts in short-term interbank markets. Funds allotted were substantially above the banking systems benchmark (basically, cash plus bank reserves at the central bank), on net more than 60 billion. They were also provided with an unusual procedure: given that proper, eligible collateral was available, banks' liquidity demand was fully met (full allotment) and at a fixed interest rate.

At the time, this was controversial, seen as prone to create future trouble, i.e., moral hazard. Instead, some suggested to let “the” market sort it out, the welfare preserving “separating equilibrium”. Essentially, two well developed but opposing theories were on offer (e.g., Freixas and Rochet, 1997): the Stiglitz-Weiss approach (e.g., Stiglitz and Weiss, 1981) to treat such events as the upshot of information asymmetries which would, while serious, rectify themselves (with proper spreads and haircuts). Another lens was offered by Diamond and Dybvig (1983). According to this view, one could read the situation in the summer of 2007 as a run, building. While initially controversial, the ECB's analysis – this is a systemic event, banks are running on each other – became the conventional view only six weeks later when Northern Rock's travails in rolling-over short-term debt in repo markets became public knowledge (Shin, 2009).<sup>1</sup> In subsequent years, central banks would keep struggling with the incentive structures they were creating intendedly (or, more than often, unintendedly) for private and public players, constantly tuning the dial between ex-ante and ex-post discipline (Cœuré, 2012).

*The beginning of unconventional policies.* The ECB's full-allotment at a fixed-rate intervention was the first in a series of unconventional monetary policy measures, implemented ever since. It was the response to the reappearance of financial stability as an objective – or, at a minimum – as a constraint for central bank policy to be reckoned with. Before that, for almost a generation, the dominating monetary policy doctrine, also dubbed modern monetary policy, had been that central banks should be (1) independent from politics and (2) focus on one primary target exclusively: keeping goods-price inflation (as measured by a consumer price index) under control. That was the philosophy successfully pursued by the Bundesbank since the mid-1970s. It became the blueprint for the ECB also, in fact, since protected by an international treaty, the ECB being even more autonomous, detached from politics, than the Bundesbank.

Historically, however, the dominance of the inflation target is a rather recent phenomenon, a response to the high-inflation 1970s. In fact, central banks owe their existence to microeconomic or sectoral needs: keeping the banking and payments system in healthy shape (Goodhart, 1989). The argument, as made from the 1980s onwards, that achieving price stability would contemporaneously underwrite financial stability, had in any case proven wanting from 2007 onwards. Indeed, under the surface of a calm price level, destructive financial tensions can accumulate. The great financial crisis, as it was dubbed a few years later, was a case in point. For central banks, “benign neglect” of banking and financial issues became infeasible. Ideas which had been minority views – e.g., macroprudential policies – became conventional. Also, from a wider historical perspective, some of the so-called unconventional instruments, later on introduced in response to the GFC, were not that new at all (Goodhart, 2011).

We refer to the experience of the Bundesbank, very successful in terms of controlling inflation, since it was seen in many dimensions as a role model for the ECB (e.g., Papadia and Välimäki, 2018). There was an undeniable impact on the development of the ECB’s new strategy of 1998: the two-pillar approach (most transparently explained in Issing *et al.*, 2001). For the ECB, this 1999-2003 blueprint was the prior to be updated after the GFC – though with a very substantial time gap (with hindsight knowledge, at least), and with material economic cost. The need for a new strategy arose in a most arcane corner of monetary policy – the interbank money market. Widening spreads between unsecured and secured or collateralized lending in this market was mirroring stress in the even more arcane structured credit domain, not very well understood initially, i.e., in the summer of 2007. But these “turbulences” subsequently also undermined the alternative approach: the crisis hit concepts somehow indiscriminately (Frankel, 2012).

In the remaining, we summarize the contributions of this issues of *Revue d’économie financière* (REF). We proceed as follows, after sketching in section 2 monetary policy’s background conditions, in particular the secular decline in nominal and real interest rates, we review in section 3 the various approaches suggested to deal with this altered environment. What became rapidly evident was that the clear division of labor between the various policy arenas and agents – monetary, fiscal and wages –, characterizing modern monetary policy, was impossible to uphold. For monetary policy this meant, more specifically, that financial instability could not be ignored, raising questions about blurring the borders to fiscal policy, addressed in section 4. Beyond and in response to that, and that is section 5,

expectations about what central banking should be charged with rose. This was not mission creep or grabbing for additional power. Instead, it was the upshot of a policy game tilted against central banks. Perhaps, this became most evident in the European case. For European fiscal policymakers the gospel that monetary policy was the “only game in town” was obviously more than welcome, an easy way out of their collective (in) action problem. Definitely, not so much for central bankers. In section 6, we conclude.

Admittedly, though we try to provide for a dispassionate perspective – this also shows in the wide varieties of views represented in this issue of REF – as former central bankers, though tempi passata, we might be conflicted. In any case, the purpose of this introduction is to whet the appetite of readers of REF – that is, it is in no ways a substitute for reading the highly informative and pertinent articles.

#### *BACKGROUND CONDITIONS: INEXORABLE DECLINE OF THE “NATURAL” RATE OF INTEREST*

Since the early 1980s, nominal interest rates have been falling. In fact, at the time they were assessed as very high. Hence, discussions were about “Why are interest rates so high?” (Blanchard and Summers, 1984). Obviously, a major part had to do with compensation for high-level inflation. Reducing and containing inflation to a much lower level, thereby also anchoring inflation expectations, thus quasi-mechanically implied lower nominal rates. Over the last 40 years, however, productivity also fell, was most of the time mediocre, except for a spurt between the mid-1990s and the mid-2000s (Bergeaud *et al.*, 2016; Gordon, 2016).

This had immediate practical consequences for MMP. It implied that the neutral rate fell commensurately, leaving not much distance to the lower bound on policy rates, initially deemed to be at zero, later in some jurisdictions effectively below zero, albeit probably not substantially – another discovery through this learning process. In any case, little room of maneuver was left to respond to shocks conventionally. The low-rate environment was constraining the effectiveness of modern central banking’s main instrument: the control of short-term money market rates.

*Monetary policy: obliged to respond to new challenges.* Agustín Carstens, Managing Director of the Bank for International Settlements, stresses in his article that two crises or two systemic shocks – the GFC and the Covid-19 pandemic – were crucial in determining central banks’ modus operandi. The pandemic, in fact, reinforced the need for central banks to become innovative, also since the financial landscape has seen

structural change over the last few decades. Nonbank financial intermediaries gained substantially in importance. As a direct corollary, the market maker of last resort function – that is, stemming runs on liquidity – came to the fore. Central banks have become institutions of last resort beyond banks. Even the apparently most liquid markets – for instance, offshore markets for US dollars – can become sources of systemic trouble. To mitigate the pandemic’s negative effects, many governments ran very substantial deficits, leading to a very substantial increase in debt levels – and in many cases barely any fiscal space. At the same time, because of the simultaneous demand and supply shock, inflation rates are at levels not seen in a generation. This also comes with the reemergence of an old issue: the interaction between fiscal and monetary policy. To ease potential tensions, providing the conditions for robust productivity growth is an obvious desideratum. A number of contributors to this issue of REF will come back to that point.

*Why have rates been so low, persistently?* In his contribution, *Frank Smets*, former Director General of economics at the European Central Bank (ECB), demonstrates that monetary policy of the ECB can be largely captured by a straightforward rule, the one devised by Athanasios Orphanides in 2003 (a variant of the central bank reaction functions or the Taylor rule(s)) – until the effective lower bound emerges. He shows that “one-year ahead (inflation) forecasts...best explain ECB interest rate decisions”. This sets the scene for why ECB interest rates remained in negative territory. Since 2013, the one year ahead inflation forecast was consistently below the ECB’s target of “below to, but close to, 2%”. Hence, “the simple answer to the question why policy rates have remained so low since 2013 is that the inflation outlook has remained persistently low”. In other words, the ECB has been doing what it was supposed to do: be true to its mandate. Moreover, Frank Smets documents that structural reasons (potential growth, ageing population, risk aversion/demand for safe assets) have been holding the neutral rate at this low level, structural meaning beyond the reach of ECB policies (and its mandate). The new ECB strategy can be read as a logical corollary to this diagnosis.

*Secular stagnation, return of inflation.* *Côme Poirier and Xavier Ragot*, Economist and President, OFCE, respectively, diagnose the return of big economic questions at the confluence of new, modern issues (climate change, digitization, etc.). Uncertainty about the path of potential growth, mediocre productivity perspectives, endangered productive participation of populations (employment ratio, at least in the U.S.). Starting from seven problems (pandemic-related supply constraints, vigorous rebound from the pandemic, excess savings and pent-up demand; wage-price dynamics (wage-spiral in U.S.); low inte-

rest rates, nominal and real; uncertain perspectives for productivity growth; consequences of addressing climate change), they argue for a profound rethinking of economic policy. The overcome strict separation between monetary and fiscal policy is in need of a reappraisal – including the “prudence” fiscal rules. Inflation is not only the charge of central banks. Fiscal policy is implied, in both directions: boosting and dampening inflation. With reference to Philip Lane, Côme Poirier and Xavier Ragot also suggest toning down fiscal consolidation in EMU (Economic and Monetary Union) member states with fiscal space. In concluding they argue for a modern functional finance, properly integrating the interaction – inevitable in their view – between monetary and fiscal stabilization policy. This would come with changes to the ECB’s mandate (integrating an output objective). It would also call for a rethinking of the role of discretionary vs. automatic stabilizers, including at the EU level (think of the discretionary SURE program, etc.).

#### *THE NEED FOR NEW DOCTRINES, NEW MONETARY STRATEGIES*

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In the run-up to the introduction of the common currency, the ECB was charged with conceiving a strategy. This process is lucidly and concisely described in Issing 2001 (Issing *et al.*, 2001). There one reads: “[...] by strategy we mean the framework and the procedures that the central bank uses to translate relevant information into monetary policy decisions [...] the ECB strategy is also closely related to its communication policy and its operating procedures.” (p. 2). It is also built from theories or doctrines. At the time, the ECB could choose essentially between two approaches: the quantity theory-oriented money supply approach (with an intermediate target) or the inflation targeting framework, focusing on the ultimate (primary) objective: keeping price inflation under control (Svensson, 2000). Acknowledging that this rides roughshod over finer distinctions, one could argue that the ECB opted for a compromise: assessing both, trend growth of money supply as well as the evolution of short-term aggregate demand and supply, pulling and pushing the price level in the aggregate. Again, when reviewing its strategy in 2003, while re-numbering pillars and defining more precisely the 2%-target, the ECB stuck with its two-pillar strategy. In 2020, however, the ECB – or the Eurosystem – reappraised and adapted or evolved its strategy.

*ECB’s new monetary strategy.* As in its first review exercise, the ECB broadly documented and explained the reassessment of its framework to orient, implement and communicate its monetary policy. *Philip Lane*, Board Member of the ECB and its chief economist, emphasizes

continuity as well as change in the new framework, the latter as the logical consequence of a changing environment. The review pursued three objectives: clarifying the operational target, the regular assessment of the appropriateness of implementational procedures as well as accounting for the effects of climate change on monetary policy objective(s). Philip Lane refers to the very substantial preparatory work – 17 different workstreams, producing highly detailed diagnoses – which went into this review as well as nurturing the broad public debate. After outlining the reasons for a symmetric 2% target, to be achieved over the medium run, he defines the proper use of conventional as well as unconventional tools, including the role of forward guidance. As regards change, Philip Lane then goes on to stress the pertinence secondary targets play in the new framework: financial stability and its (inexorable) interrelation with monetary policy as well as the consequences of the strive for net-zero carbon emissions until 2050. As concerns the response to climate change, the ECB will integrate its implications into its assessment tools as well as into the operational framework.

*The Federal Reserve's new framework.* In 2019, the U.S. Fed launched a review of its Statement on Longer-Run Goals and Monetary Policy Strategy, its first-ever reassessment of its policy approach, published in 2012. *Richard H. Clarida*, Vice-President of the Federal Reserve Board until earlier this year and again Professor at Columbia University, stressed that this adjustment builds on a framework that “served us well and supported the Federal Reserve’s efforts after the global financial crisis”. The reasons for a reassessment were, again, changing background conditions and new analyses, i.e., “both the U.S. economy and, equally importantly, our understanding of the economy have clearly evolved along several crucial dimension since 2012”. In particular the very significant decline in the neutral rate, as expressed in the median FOMC members longer-run expectations comes with “critical implications for monetary policy because it leaves the FOMC with less conventional policy space. And then, also, the responsiveness of inflation to labor market conditions seems to have diminished substantially, with another natural rate (the one for unemployment) also falling. This comes with lower expected inflation. To respond to this new environment and achieve its longer run goal of personal consumer expenditures (PCE) inflation at – but not below! the 2% longer-rung goal the Fed makes use of “temporary price-level targeting that reverts to flexible inflation targeting once the conditions for liftoff have been reached”. Concurrently, the Fed tries to contain employment shortfalls, as long as this is in line with the price-stability objective. Richard H. Clarida concisely summarizes the result of the strategy review as representing

“an evolution, not a revolution”. Also stressing that the Fed will deploy the gamut of tools, conventional as well as unconventional to achieve its objectives.

*Monetary policy in a more challenging environment.* François Villeroy de Galhau, Governor, Banque de France, and his collaborators Vincent Bignon and Bruno Cabrillac observe that all central banks, notwithstanding their over a substantial time accumulated reputation capital, had major difficulties in honoring their mandate of achieving their inflation objective of about 2%. Still, inflation expectations at longer horizons remained, except for the case of Japan, anchored at the target level. Covid-19 exemplifies the complexity of the challenge: being a supply as well as a demand shock, simultaneously. To address the latter crisis as well as its precursor, central banks had to embark on exceptional programs, changing the length as well as the structure of their balance sheets. Exiting the unconventional terrain, re-normalizing operations, is a prime objective. The ECB’s strategy review is part of this effort, including in simplifying its operational objective (symmetric about 2% and for the medium run). To achieve this objective, and in view of the higher probability of the effective lower bound on the policy rate, the toolbox will have to continue to include the “quatuor” of previously unconventional tools (negative policy rate, forward guidance, asset purchasing programs, and long-term liquidity provision). Again, this is a consequence of low real interest rates (low productivity, population aging and demand for safe assets). Moreover, monetary policy is confronted with three interrelated structural challenges: high levels of post-pandemic public debt, the challenges arising from addressing climate change, and the complex ramifications of monetary policy for wealth and income distribution. The former is closely related to financial stability concerns with regard to possible asset bubbles.

*New guidelines – losing the anchor?* Otmar Issing, former chief economist of Bundesbank and ECB, concisely demonstrates how frameworks are responses to politico-economic contexts as well as analytical concepts to make sense of them. To put a judgment on the newest ECB framework, Issing suggests “to clarify in which environment and against what background the present discussion should be conducted”. He positions the initial ECB approach against a “flexible inflation targeting” concept, which he argues has been ultimately tautological, and the Federal Reserves’ risk management strategy, which he finds problematic because of its lack of concern – and ultimately co-responsibility – for evolving financial imbalances. Thus, both approaches do not properly acknowledge macro-prudential concerns which the second (monetary) pillar of the ECB, according to Issing, did – at least implicitly or indirectly. Issing major concern is that central banks,



when not protected by a “clear and limited mandate”, are prone to underdeliver, to expose themselves to justified political critique – and lose their independence. Under these circumstances, possibly justifiably so.

*What can markets, the general public, make of the new framework?* In order to be (1) comprehensible and (2) accountable, the intended audience should be able to clearly perceive what central banks are up to do, contingent on expected states of the economy. *Dirk Schumacher*, a long-term central bank watcher and *versteh*er, stresses this expectation in particular since, given such intelligibility and credibility, “financial markets amplify central bank’s ability to steer the economy and inflation after an exogenous shock has pushed the economy away from its equilibrium path”. Based on an assessment of financial markets mediation channels – a financial condition index – Dirk Schumacher distinguishes between reading central banks in normal and in more complex times. His measuring device is, again, the Orphanides rule which unequivocally suggest policy rates deep in negative territory, hence the need for expanding the central bank balance sheet commensurately. Unconventional, however, also means more instruments, complexifying the story; as does, on another plane, the interaction between monetary and fiscal policy. This refers to absorbing ever larger volumes of public debt and, a specific in EMU, addressing (or not) spreads between EMU member states, which are, of course, monetary sub-sovereigns.

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### *TOO CLOSE TO JUSTIFY? FISCALIZATION OF MONETARY POLICY*

Following the canonical view, fiscal policy has three functions to discharge: allocation, redistribution, and stabilization (Musgrave, 1959; Bénassy-Quéré *et al.*, 2021). With regard to stabilization, though working through a “common funnel” (Tobin, 1986), the mainstream view was that fiscal policy was on the backseat. Obviously, this assessment has substantially changed since the GFC. But there seemed to be no doubt that independent central banks should stay away from interfering in allocation or, even more so, redistribution. This was not in line with a narrow understanding of central banks’ mandate. Central bankers, technocrats, or unelected officials, had no political legitimacy to engage in these domains (Tucker, 2018).

Alas, this neat separation between policy domains never existed, not only in the stabilization role. With the implementation of unconventional policies – the end of the NICE (non-inflationary, consistently

expansionary) period (King, 2003) – this became undeniably obvious. Monetary policy comes, inexorably, with allocative and distributive consequences. Again, in EMU these effects are particularly obvious.

*Fiscalization of central banks: threatening their independence?* Stephen G. Cecchetti and Kermit L. Schoenholtz, professors of economics at Brandeis University and New York University, respectively, and outstanding analysts of international monetary policy and its environment, document how, ever since 2007, the lines between monetary and fiscal policy became blurred. The paramount indicator of this “lack of clarity, distinction” is the size and the structure of central banks’ balance sheets. With well-functioning markets, conventional monetary policy “simply” has to “control the supply of central bank’s own liabilities”. And “by focusing on this one policy instrument, the central bank leaves financial markets to determine the price of maturity, liquidity, and credit risk”. Alas, in (not only) the GFC financial markets did not work properly. Some markets went missing. Arbitrage broke down. And central banks’ balance sheets were forced to substitute for them. They became, as Stephen G. Cecchetti and Kermit L. Schoenholtz document with reference to the balance sheets (size and structure) of the Fed, the BoJ and the ECB, lender of (market maker of, investor of, as well as risk bearer of) last resort, inevitably with allocative and distributive consequences. Stephen G. Cecchetti and Kermit L. Schoenholtz diagnose two threats when fiscalization is not reined in: an ever-larger role of statist management of credit allocation, and therefore, an ever-less convincing justification for central bank independence. Hence, they suggest getting back to a structural distinction between fiscal and monetary policy.

*Crises’ lessons: Synergy of monetary and fiscal policy.* Starting from the observation that while facing “similar challenges related to maintaining price stability in the 2000s”, the ECB and Fed have experienced different outcomes, Athanasios Orphanides, MIT professor and former governor of the Central Bank of Cyprus, traces these differences to an ECB much more hesitant to embarking on a full-fledged accommodative monetary policy response in the case of the ECB. In addition, and again, idiosyncrasies across EMU member states matter, more specifically, differences in the credit standings of sovereigns in financial markets. Allowing doubts about the safety of sovereign assets, as they were nurtured by the Deauville agreement, not only contributed to the impairment of the transmission of ECB’s policy impulses. The use of external rating agencies in determining eligibility of collateral for access to ECB also contributed to the risk of falling into bad equilibria. With reference to the substantially different, more flexible approach to the Covid-19 crisis, Athanasios Orphanides documents that the ECB, by

accounting for its synergistic relation with fiscal policy, did contribute to a cushioning of the shock. Containing spreads between EMU sub-sovereigns also “protected against the further fragmentation of the euro area”.

### *WIDENING HORIZON: ADDITIONAL CHALLENGES*

In 1998, when the first blueprint for ECB’s monetary strategy was conceived, climate change was, of course, not a complete unknown. The Kyoto Protocol, established in 1992, was signed a year before. But the Stern Report or the Paris Protocol were far in the future. In any case, pondering “greening” central banking at the time would have been deemed bizarre. Financial instability had not yet arrived in a systemic way on the shore of the North Atlantic, hence it was also a subject more on the fringes of the academic and policymakers’ discourse. While some thought about reducing the printing of large denomination banknotes, cash was definitely king. In fact, its volume increasing with the introduction of the Euro. Although commercial e-money was developing, central bank digital currency money seemed futuristic. Finally, the idea that monetary policy should be justified in the court of public opinion, held accountable for its societal consequences was simply counter-current, at a time when central banks had been fighting hard to assert their independence.

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In the recent strategic reappraisals, however, all these issues were pondered, actually had an impact on the conception of the *new* central bank doctrines. While every topic merits intensive debate – in fact, is on the program of future issues of REF – we have asked eminent experts to address these questions concisely.

*Mitigating risks of climate change: a role for central banks?* Monetary policy impulses are mediated by the political-economic environment with which they interact, the starting point of Bundesbank Board Member *Sabine Mauderer* and her co-authors *David Döhrmann* and *Joschka Gerigk*’s contribution. With the “most important externality” (Stern, 2007) gaining ever more importance – becoming “a defining issue of our age” – policy measures to mitigate the physical and socio-economic risks of climate change have an influence on how monetary policy works. This has been acknowledged in the creation of a *Network for Greening the Financial System* by central banks and supervisors in 2017, of which Sabine Mauderer is now the vice chair. Climate risks have an impact on what central banks typically are supposed to address within their mandate. They are – potentially – pertinent for the operational framework (e.g., eligibility criteria). They do impact on financial stability. But they also come with consequences for the primary objective (think, for instance, of the recent debates

about “green” inflation). A particularly pertinent issue – considering that this is about providing a global public good – is the international coordination of these policies.

*New financial environment, new financial stability policies.* Finance has been shifting ever more towards non-bank or market-based intermediation. That is the starting point of Sciences Po professor and regulation scholar *Matthias Thiemann*'s contribution. The crisis forced central banks, depending on their respective institutional context, to go beyond the traditional role of lender of last resort – which was, incidentally, kept in EMU “constructively ambiguous” to contain moral hazard *ex ante*. This philosophy became untenable after the GFC. In fact, problems of systemic instability were addressed where they arose. The U.S., with its most diversified financial landscape, had to be most innovative. Matthias Thiemann stresses a particularly problematic issue: “the asymmetric [pro-cyclical] set-up of financial stability policies”. With “credit intermediation [operating ever more] [...] outside of the perimeter of banking regulation” this becomes particularly problematic. What used to be called the “Greenspan put” is now generalized. Issues have been worked on in international fora (such as the Financial Stability Board) ever since the GFC. But resistance to change has been so significant that important regulatory policy measures are still stuck (on par convertibility of money market funds; role of CCPs for clearing in repo markets), as is also documented in the papers collected in the Bank for International Settlements' December 2021 Quarterly Review (e.g., Carstens, 2021). Matthias Thiemann holds that if “the safety net is extended [without reforms implemented] central banks risk to become the final backstop for a financial system, whose dynamics they no longer control”.

*Digital money, central banks, sovereignty.* For almost two centuries it seemed evident, as *Michel Aglietta* and *Natacha Valla*, professor of economics, University of Paris-Nanterre, and Dean, School of Management and Innovation, Sciences Po, respectively, argue, that money is a public good, its provision the exclusive remit of the sovereign, at least as concerns cash. For some 70 years, internationally, the system has been dominated by a hegemon, with the U.S. currency at its core, even after the breakdown of the fixed-exchange-rate Bretton-Woods System. With rise of technologies such as blockchain, allowing for decentralized provision of financial services, and the disruptive opening of payments systems to nonbank service providers, the monetary system faces a deep structural change. With economies of scale, scope and dense network externalities the threat of a domination by Big Tech is very substantial (BIS, 2019). The attractiveness of these lines of business for Big Tech is especially related to the data-richness of payments.

Given (1) the importance of payments (as well as, closely related, clearing and settlement) for central banks and (2) the inherent, quasi-natural strong market imperfections, i.e., the need for public sector involvement, central banks are intensively assessing propositions to issue central bank digital currencies. An important issue is “to counter the domination of private monopolies of the payments system”. Topics assessed have to do with the potential consequences for bank intermediation (shrinking deposit base, balance sheet), financial stability (risk of sudden runs) and monetary policy implementation (more leeway for negative rates) – see also the three reports released by the BIS and seven major central banks in September 2021 (BIS *et al.*, 2021). Moreover, the perspective of digitalization of payments might imply disruptive consequences for the existing international monetary system, leading towards its multilateralization. As Michel Aglietta and Natacha Valla stress, this also means that the role of special drawing rights is up for a reappraisal again.

*Social responsibility of central banks.* Laurence Scialom, professor of Universities, University of Paris-Nanterre, starts with the observation that even pure monetary policy inevitably produces side effects in domains beyond central banks’ immediate mandate. That is, even without new, additional charges, she argues that the social responsibility of central banks was “limited to preserving the value of money” was a myth. Hence, “the idea of a de-politization of central banks” was flawed. Concurrently, this justifies being skeptical about the prevailing idea of delegating monetary policy decisions to technocrats. This position is also confirmed by a perception in a general audience that central banks have been standing on the sideline when developments, which ultimately lead to the GFC, were evolving. Thus, the GFC made evident the gap between *de jure* (mandate) and *de facto* social responsibility (as observed in reality), lifting the “veil of [alleged] neutrality of monetary management”. With regressive distributive impacts of asset purchasing programs acknowledged and forceful requests to green central bank policy, prohibiting a further “bias to inaction”. While some progress towards more “societal responsibility” has been made, Laurence Scialom suggests pondering the perspective of a “banque-providence”, “embedded in society, protecting against [the flaws] of financial markets”. One could argue that with its July 2012 “Whatever it takes” moment, the ECB has taken a key step towards this objective. That said, central banks remain very much focused on managing financial markets expectations alone – as one of us once argued, “if monetary policy remains a conversation between central banks and financial markets, we shouldn’t be surprised if people don’t trust us” (Cœuré, 2019).

*Democratic (Parliamentary) accountability of central banks.* The concluding contribution by *Pervenche Berès*, a long-term former president of the European Parliament's Monetary Affairs Committee (ECON), concisely (and most convincingly) explains how the EP developed – initially faced with some reluctance on the side of ECB – the monetary dialogue. She describes resources deployed to hold the ECB accountable, in particular, the panel of experts, preparing ECON members for the testimonies of the ECB president. These documents, regularly highly informative, and written from a variety of perspectives, are put in the public domain. With the GFC and the peripheral euro area sovereign debt crisis, new institutions and surveillance mechanisms were created. In addition, over the years a more encompassing interpretation of the “secondary mandate”, concurrently increasing the perimeter of accountability, gained in weight. As a result, the ECB can be perceived as one of the arms of the welfare state. *Pervenche Berès* states that this enlargement of the ECB's mandate, again, is only legitimate when exposed to open, democratic debate.

### *MONETARY POLICY FRAMEWORKS, OPEN ISSUES*

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Monetary policy approaches evolve in response to (1) changing background conditions as well as (2) the political economic environment, the vector of interest that impacts on monetary policy. Tracing the new doctrines – the new policy frameworks – to these changing environments and their updated reading is the purpose of this issue of *Revue d'économie financière*. We have summarized the main points raised by the contributors, all outstanding experts and some, in addition, policymakers. We have also shown that theoretical debates were always playing out in the background – confirming Keynes' famous quip that “practical men, who believe themselves to be quite exempt from any intellectual influences, are usually the slaves of some defunct economist”.

Central banks, the paragons of conservatism and groupthink according to many, have proved intellectually and practically nimble enough to navigate the extraordinarily choppy waters of the last twenty years. This bodes well for their preparedness to address emerging challenges such as digitalization and climate change. Whether they can keep doing so with unchanged institutional frameworks will be the great question of the coming years – which future issues of the REF will certainly explore.

## NOTE

1. At the time, Bundesbank provided more than 50% of the Eurosystem's liquidity to the banking system. Hence, it had first rate intelligence on market ruptures, as did the Banque de France. Both institutions therefore pushed strongly to supply excess liquidity in order to keep spreads in interbank markets between secured and unsecured loans at bay.

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BACKGROUND CONDITIONS:  
INEXORABLE DECLINE  
OF THE “NATURAL”  
RATE OF INTEREST



# CENTRAL BANKS ADAPT TO NEW CHALLENGES

AGUSTÍN CARSTENS\*

**T**he Covid-19 pandemic has put the spotlight on central banks' core role in crisis management. Just as they did during the great financial crisis (GFC) of 2007-2009, central banks have again demonstrated their ability to deal with systemic events by adapting their response to the specific nature of the stress. Central banks in advanced and emerging market economies have implemented an unprecedented array of measures, going well beyond those adopted during the GFC. These measures aimed not only to stabilise financial markets but also to channel credit directly to firms and households.

Reinforced by fiscal support and supervisory flexibility, the actions of central banks during the Covid-19 crisis limited the fallout so that the global economy bounced back more quickly than initially expected. But central banks still face daunting challenges that will continue to test their adaptability. The evolution of central banks' lender of last resort function depends critically on lowering the likelihood and intensity of financial stress by applying a macroprudential approach to the regulation of non-bank financial intermediaries (NBFIs). Furthermore, interactions between monetary and fiscal policy will complicate the normalisation of policies and could even threaten central banks' credibility.

## *CRISIS RESPONSE AND THE EVOLVING FINANCIAL LANDSCAPE*

When the Covid-19 crisis began, policymakers took swift and forceful action, tailored to the nature of the stress experienced by each

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country and the structure of the local financial system. Central banks deployed their full arsenal of tools, sometimes in unprecedented ways, to stabilise the financial system and cushion the damage to the real economy inflicted by measures to contain the health crisis. The central bank response went hand in hand with large-scale fiscal stimulus and was complemented by supervisory measures aimed at supporting banks' ability and willingness to lend.

In addition to promptly easing their policy stance, central banks acted decisively to prevent market dysfunction. Acting in their capacity as lenders of last resort – one of their core functions – their market interventions were critical to preserving the effectiveness of the monetary transmission mechanism, maintaining financial stability and supporting the flow of credit to firms and households (BIS, 2020).

The lender of last resort function has evolved over time with changes in the financial landscape. Historically, banks dominated the provision of credit to firms and households. Consequently, central bank emergency lending focused on liquidity support for banks. However, the footprint of banks in the financial system has declined while that of NBFIs has increased (FSB, 2020). NBFIs provide an increasingly large share of financing for the real economy. By some estimates, NBFIs' share of global financial assets is now larger than that of banks: almost 50% versus less than 40% (see chart 1a below).

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As well as credit provision, liquidity provision increasingly depends on NBFIs. For example, the structure of market-making in government bond markets has shifted from a bank-centric model to a hybrid one in which NBFIs, notably principal trading firms and hedge funds, play an important role alongside bank dealers (see chart 1b below). This shift has occurred in several countries and, while farthest advanced in liquid segments, is also evident in less liquid ones (Eren et Wooldridge, 2021).

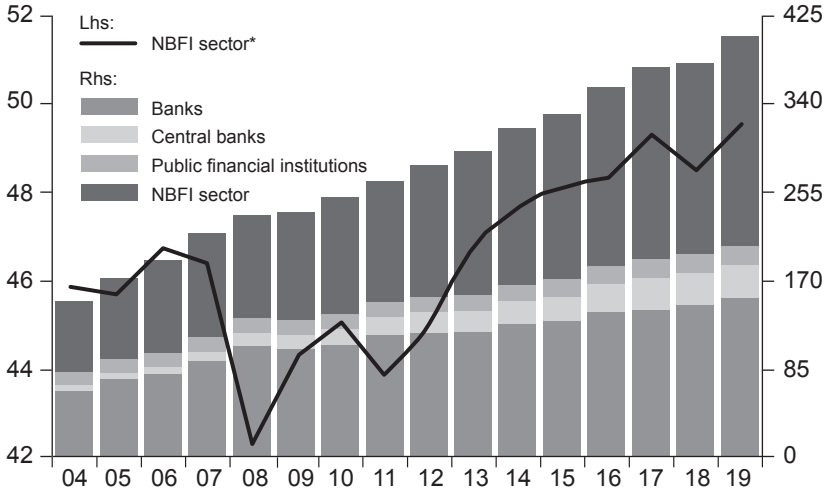
### *FROM LENDER OF LAST RESORT TO MARKET-MAKER OF LAST RESORT*

The GFC heralded a clear shift in central banks' role as lenders of last resort to more than just banks, and the Covid-19 crisis took this shift further. During the GFC, central banks broke new ground with the scale and breadth of their measures, particularly in terms of eligible counterparties and collateral. During the Covid-19 crisis, a striking feature was the prevalence of interventions aimed at NBFIs, including entities such as mutual funds.

In modern financial systems, markets may be subject to "runs" driven by forces similar to those underlying bank runs (Aramonte *et al.*, 2021). A sudden increase in market participants' uncertainty about

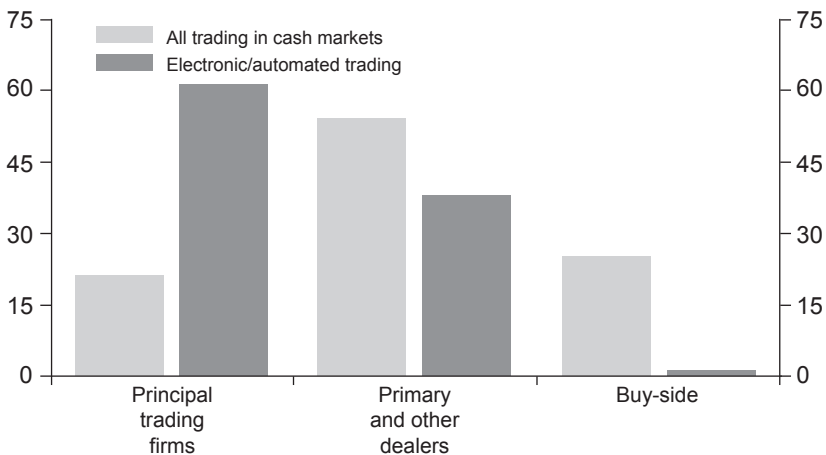
### Charts 1 Rising Footprint of NBFIs in the Financial System

**Chart 1a**  
NBFIs Hold Nearly Half of Global Financial Assets  
[ %, lhs; USD trn, rhs]



\* NBI sector includes insurance corporations, pension funds, other financial institutions and financial auxiliaries.

**Chart 1b**  
NBFIs Are Important Market Makers for US Treasuries\*



\* Shares of trading volume by participant type for the cash Treasury market from 1 April to 31 December 2019.

Sources for both charts: Harkrader et Puglia (2020).

asset valuations or counterparties' financial strength can cause them to disengage from markets. This can trigger a self-reinforcing spiral involving declines in market and funding liquidity and heightened counterparty credit risk that can lead to the breakdown of key financial markets.

Such dynamics manifested themselves early in the Covid-19 crisis, when money market mutual funds faced strains reminiscent of the GFC. A flight to safety resulted in large-scale redemptions from prime money market funds in the United States. This had knock-on effects on crucial funding markets, particularly on that for commercial paper, where prime money market funds are key investors. As a result, funding costs in these markets soared and issuance dropped. The disruptions reverberated globally, given that non-US firms and banks rely heavily on these markets, contributing to a global shortage of US dollar liquidity. The Federal Reserve (Fed) reacted swiftly, establishing a facility to backstop money market funds. This stemmed redemptions and averted a wider market breakdown (Eren *et al.*, 2020a, 2020b). In response to similar strains, the Bank of Thailand and the Reserve Bank of India also introduced facilities to provide liquidity to money market mutual funds through banks. Such backstops proved effective in shoring up confidence and easing tensions (BIS, 2020).

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The dislocation in the US Treasury market in March 2020 is a striking example of how central banks have responded to the rising importance of NBFIs and market-based finance by acting as market-makers of last resort. The Covid-19 shock led to one-sided trading flows to dealers because in aggregate all types of investor – leveraged and unleveraged NBFIs alike – sought to increase the liquidity of their portfolios by selling US Treasuries. Under normal circumstances, liquidity providers would be able to alleviate market stresses by absorbing sales. However, the Treasury inventories of bank dealers were already stretched, as they had absorbed a large amount of issuance in prior years. Rising leverage in the run-up to the crisis suggests that hedge funds' balance sheets were also stretched (Eren and Wooldridge, 2021). During the turmoil in March 2020, bank dealers, principal trading firms and hedge funds were unable or unwilling to keep pace with the surge in liquidity demand in the US Treasury market amid rising risks to liquidity provision, resulting in a severe bout of volatility (Schrimpf *et al.*, 2020). The Fed responded with massive purchases of Treasuries. The episode highlights how the behaviour of NBFIs can influence the scope and focus of central banks' emergency operations.

More broadly, during the Covid-19 crisis central banks bought securities in a wide range of market segments with the aim of preserving market functioning and access to funding. They undertook large-scale

purchases of government bonds, either by ramping up existing programmes or by establishing new ones. Notably, some central banks also bought private sector assets. Central banks in major advanced economies (AEs) established or expanded facilities to fund purchases of commercial paper, corporate bonds, asset-backed securities and even equities. Many central banks also set up targeted lending operations to channel credit via banks down the “last mile” to small and medium-sized enterprises (Carstens, 2020).

In EMEs, central banks broke new ground with interventions in local currency bond markets to ensure their smooth functioning. Owing to currency mismatches on their balance sheets, as EME currencies depreciate, foreign investors typically incur exchange rate losses alongside those caused by rising local currency yields, which tend to move in tandem. Given the size of their exposures relative to local markets, adjustments in foreign investors’ portfolios intensify the interplay between yields and exchange rates (Carstens and Shin, 2019). This dynamic was again visible during the market turmoil in March 2020. Countries with higher shares of foreign ownership in local currency bond markets experienced significantly larger increases in local currency bond spreads following the outbreak of Covid-19 (Hördahl and Shim, 2020).

To stabilise markets, many EME central banks, including those of India, Korea, the Philippines, Poland, Turkey and South Africa, implemented government bond purchase programmes for the first time. Others, such as those of Mexico and Brazil, undertook Operation Twist-type transactions, absorbing duration from the market by buying long-term securities and selling short-term ones. Some EME central banks also introduced measures to support corporate bond markets. In South Korea and Mexico, for example, they introduced facilities to lend to financial institutions against corporate bond collateral. Similarly, the Bank of Thailand established a corporate bond stabilisation fund to help firms roll over short-term debt.

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### *EXTENDING THE LENDER OF LAST RESORT INTERNATIONALLY*

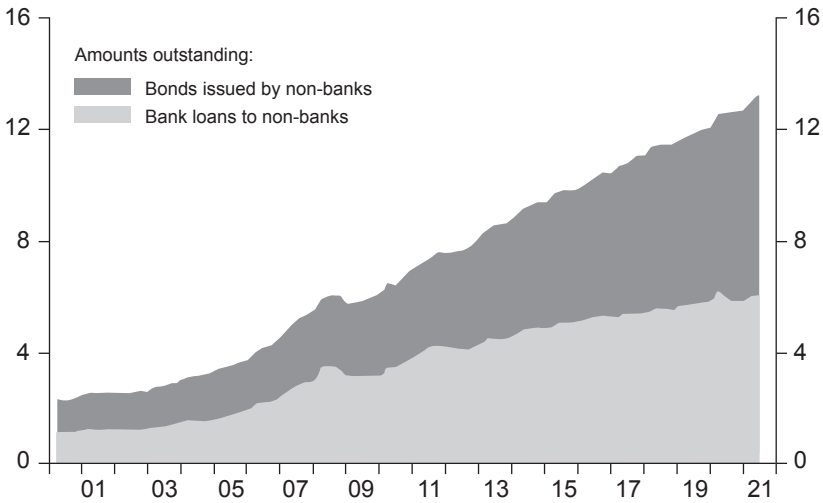
While interventions in local currency markets helped to stabilise yields and exchange rates, the March 2020 turmoil showed that liquidity support in foreign currency is still as important as ever. There is a consensus that self-insurance through the accumulation of foreign exchange (FX) reserves is sub-optimal. Similarly, there is only so much that individual countries can do to limit exposures through capital flow management safeguards without forgoing the benefits of participation

in the global financial system. In the absence of a comprehensive, well-funded global safety net, liquidity backstops under the aegis of the central bank issuing the international currency will continue to be the prime safeguard (Carstens, 2021b).

Foreign currency debt has steadily increased since the GFC. US dollar liabilities of non-banks located outside the United States exceeded \$13 trillion in mid-2021, about double what they were ten years earlier (see chart 2a). There is also a significant amount of off-balance sheet dollar borrowing via FX derivatives, primarily through FX swaps. The high participation of foreign investors in domestic markets poses additional risks to financial stability through the mutually reinforcing loop between capital outflows and currency depreciation (see chart 2b below).

**Charts 2  
Foreign Currency Exposures Are Large**

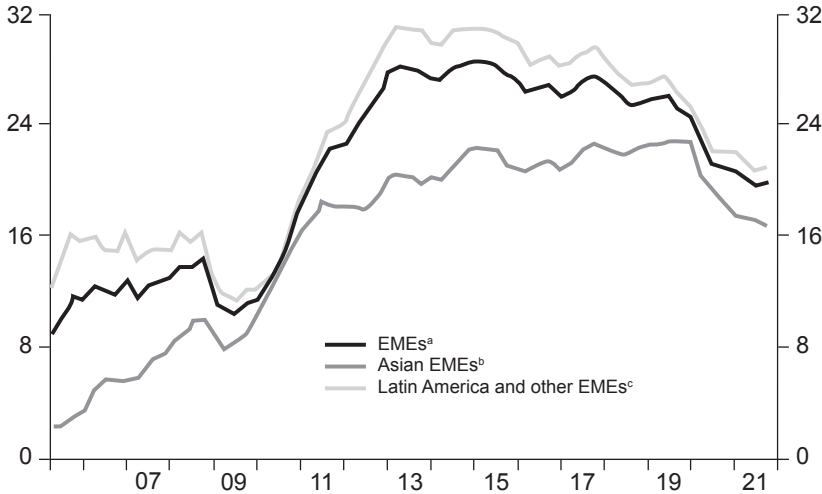
**Chart 2a  
US Dollar Credit to Non-Banks Outside the United States\*  
(USD trn)**



\* Non-banks comprise non-bank financial entities, non-financial corporations, governments, households and international organisations.



**Chart 2b**  
**Foreign Ownership of Local Currency Sovereign Bonds\***  
 [%]



\* Simple averages of regional economies.

<sup>a</sup> Asian EMEs, Latin America and other EMEs.

<sup>b</sup> Indonesia, South Korea and Thailand.

<sup>c</sup> Brazil, Colombia, Hungary, Mexico, Peru, Poland, South Africa and Turkey.

Sources for both charts: IIF, Global Debt Monitor database; BIS Global Liquidity Indicators.

Against this backdrop, it is not uncommon for offshore US dollar markets to come under stress in times of market turbulence. Many non-US financial institutions and firms cannot draw on a US dollar deposit base or raise funds directly in US money markets, and so are reliant on FX swaps (CGFS, 2020). During the Covid-19 crisis, just as during the GFC, rapid de-risking by global investors led to a scramble for dollars, which appreciated substantially. With bank funding under heavy pressure, possibly compounded by tighter risk constraints from the dollar appreciation, the supply of dollar funding dried up in many parts of the world.

To ensure that tensions in offshore dollar markets did not aggravate stress in the US financial system, in March 2020 the Federal Reserve acted swiftly to ease dollar funding shortages in various jurisdictions. It utilised standing swap lines established during the GFC with five major AE central banks and reopened them for another nine. The amounts and maturities were also increased, and the pricing made more favourable. Subsequently, to help a broader set of countries liquefy their FX reserves and relieve selling pressure on US Treasuries, the Fed opened a repo facility. This allowed central banks to borrow US dollars directly from the Federal Reserve using their holdings of U.S. Treasuries as

collateral rather than having to do so in the market, possibly in unfavourable market conditions, or to sell them. It is hard to overplay the stabilising role of the Fed's swap lines. Already at the time of the GFC, Fed swaps had been arguably more effective in calming market conditions than EME central banks drawing on their FX reserves to provide US dollars.

### *CHALLENGES POSED BY THE RISING FOOTPRINT OF NBFIS*

Against the backdrop of the rising footprint of NBFIs, repeated occurrences of massive central bank interventions to calm markets suggest that the *status quo* is unacceptable. Fundamental adjustments to the regulatory framework for NBFIs are called for, to reduce their systemic impact. The ultimate objective is to build the war chests of individual NBFIs in good times in order to mitigate their collective retrenchment in times of stress.

Central bank liquidity assistance should not be the only game in town. The expectation of such assistance creates moral hazard, distorting prices and leading to resource misallocation. In addition, it comes with implementation challenges and side effects, and is difficult to wind down. Emergency central bank assistance may also conflict with other policy objectives. For example, market turmoil may arise precisely when a flareup in inflation calls for monetary policy to be tightened.

To mitigate moral hazard, banks' access to the lender of last resort is conditioned on their regulation and supervision (Aglietta and Mojon, 2014). Two decades ago, the long-standing recognition of system-wide issues in the banking sector gave rise to the macroprudential approach to regulation and supervision (Crockett, 2000). In part drawing on that approach, post GFC-reforms have strengthened banks and reduced their systemic impact. Given the increasing role that NBFIs play in the financial system and the attendant systemic risks that their collective actions pose, it is now important to apply a macroprudential approach to their regulation as well.

The market turmoil in March 2020 was another reminder that the overall system may be unstable even if individual institutions, considered on a standalone basis, may appear stable. In other words, actions that seem prudent from the viewpoint of individual institutions may destabilise the system. This is known as the "fallacy of composition". One example is the procyclical increase in margins to address heightened counterparty risks during volatility spikes (CGFS, 2010). In March 2020, concerns about counterparty credit risk were indeed

allayed by such practices, helping to limit the erosion of confidence. But by triggering a need to come up with cash to meet margin calls at short notice, they gave rise to liquidity pressures elsewhere in the system (BCBS-CPMI-IOSCO, 2021).

Like banks, NBFIs can be procyclical as a sector: they are vulnerable to fluctuations in leverage and liquidity runs that have system-wide consequences (Aramonte *et al.*, 2021). In March 2020, as NBFIs retreated en masse, liquidity evaporated, and markets froze amid deleveraging and feedback loops. These dynamics triggered or amplified global disruptions that not only threatened financial stability but strongly hampered the transmission of monetary policy to the broader economy.

More effective prevention should be the main answer to regulatory gaps in the NBFI sector. Reducing the likelihood and intensity of financial stress in the first place would also reduce the need for emergency central bank assistance. Since this objective refers to the system as a whole, it calls for a macroprudential approach to regulation (Carstens, 2021a).

One element of the policy response is better information. This element is necessary even if not sufficient to combat the above-mentioned incentive distortions that are at the core of financial vulnerabilities. For authorities, this would come in the form of enhanced reporting as a basis for stronger monitoring. For markets, it would take the shape of enhanced disclosure.

Another element is to ensure that NBFIs have sufficient shock-absorbing capacity. This capacity will have to be tailored to the nature of the NBFI's vulnerabilities, and hence the inherent leverage and liquidity mismatches. When leverage is an issue, less stress-sensitive ("through-the-cycle") margining practices and, above all, higher and usable capital buffers will help. In turn, the options for mitigating liquidity mismatches include higher usable liquidity buffers, well designed limits to convertibility into cash and, more generally, less reliance on redemption methods that presume liquid markets (not in-cash but in-kind). Of course, the shock-absorbing capacity would also need to take into account the interaction between leverage and illiquidity.

A third element is the adoption of a less fragmented and more consolidated supervisory perspectives. As banking supervisors have long recognised, monitoring and supervising firms' activities on a consolidated basis is critical. In a world in which firms increasingly operate across sectors and borders, a holistic perspective is essential to understanding where the risks lie. This is all the more important as new

players emerge, such as the entry of big techs into financial services and the growth of decentralised finance (Aramonte *et al.*, 2021). Regulations that were formulated with specific financial stability risks in mind (credit and liquidity risk, market risk, etc.) may be inadequate for addressing the combination of policy concerns to which these new players give rise (Carstens, 2021a).

### *CHALLENGES POSED BY INFLATION AND FISCAL-MONETARY POLICY INTERACTIONS*

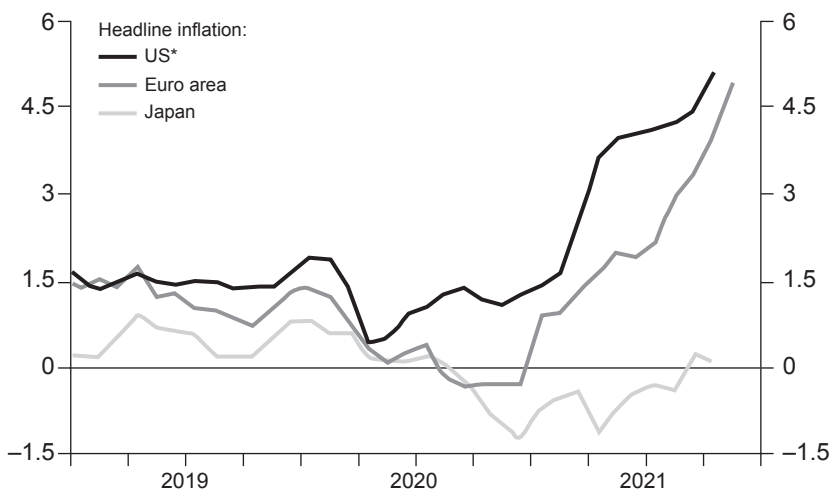
With the fading of the Covid-19 crisis, central banks face renewed challenges from the uncertain outlook for inflation and potential tensions between fiscal and monetary policies.

In 2021, inflation picked up sharply in the United States, the euro area and other AEs, reaching levels not seen in decades (see chart 3a). Inflation also rose rapidly in several EMEs – most notably, Brazil and Turkey (see chart 3b below). Whether the recent inflationary pressures will prove to be persistent remains a key question. Many Asian economies – in particular, China and Japan – have so far dodged this otherwise global spike in inflation. In the United States and euro area, the increase in inflation expectations has been much sharper in the near term than the medium term.

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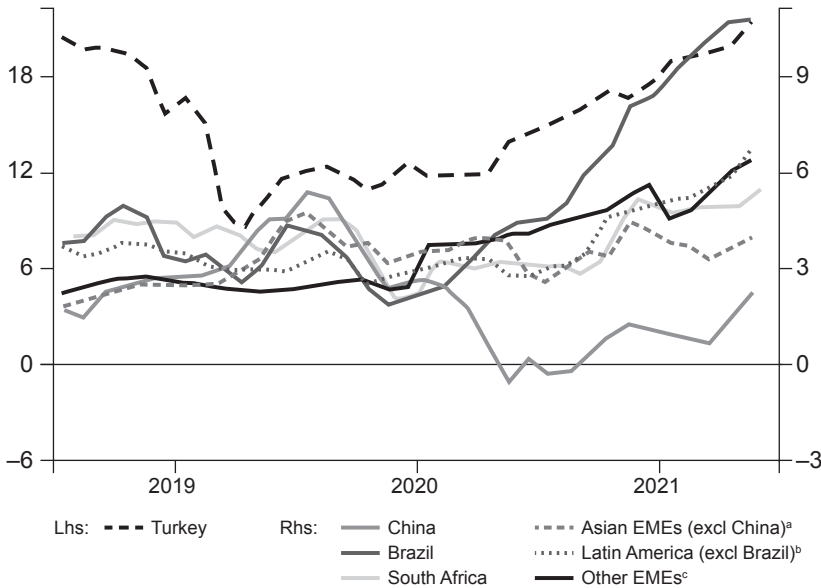
**Charts 3**  
**Inflation Is on the Rise with Few Exceptions**  
[%]

**Chart 3a**  
**Major Advanced Economies (AEs)**



\* Personal consumption expenditure inflation.

Chart 3b  
EMEs\*



\* Regional averages weighted by GDP and PPP exchange rates.

<sup>a</sup> China, Hong Kong, India, Indonesia, South Korea, Malaysia, Philippines, Singapore and Thailand.

<sup>b</sup> Chile, Colombia, Mexico and Peru.

<sup>c</sup> Czech Republic, Hungary, Israel, Poland, Russia and Saudi Arabia.

Sources for both charts: Datastream ; national data; BIS calculations.

Uncertainty about inflation could put central banks to a severe test. It might be hard to avoid bouts of high volatility and tension in markets. For example, markets might adjust strongly in response to monetary policy tightening, even if inflation increases prove temporary in the end. Staying ahead of the inflation curve and clearly signalling a path towards normalisation will be essential. This will also help mitigate the build-up of financial vulnerabilities fuelled by easy financial conditions, in housing markets, the corporate sector and among NBFIs.

In the medium term, authorities will need to restore policy space as conditions allow. But normalising policies will not be easy. Public and private debt levels are very high, and central bank balance sheets have rarely been as large as they are now. Fiscal and monetary policies reinforced each other during the Covid-19 crisis, but their interactions could now give rise to tensions (Cœuré, 2020). Increases in fiscal deficits have in the past gone hand in hand with a greater risk of higher inflation outcomes.

Tensions will test policy frameworks in EMEs especially. In 2020, with inflation low and global financial conditions easing, EME central banks could cut interest rates and use unconventional monetary policy tools. Now, the policy trade-offs are starker. Several EMEs have already raised policy rates in response to rising inflation. They must tread a thin line between moving too quickly and stifling the recovery, or moving too slowly and risking capital outflows, currency depreciations and a de-anchoring of inflation expectations. Should the US dollar appreciate significantly, the pressure on many EMEs would mount further. Sovereign debt downgrades might follow, possibly associated with a need for international support.

Since the GFC, central banks have successfully used a mix of tools to mitigate capital flow-related risks, including macroprudential measures and occasional foreign exchange intervention. But the tools and the framework for their application are still works in progress (ACC, 2020; CGFS, 2021).

The best way to reduce tensions between fiscal and monetary policies is by raising sustainable growth. Achieving higher growth calls for structural reforms, supported by growth-friendly fiscal policies. To ensure that central banks can continue to focus on their core mandate of maintaining price and financial stability, their independence needs to be preserved.

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# WHY HAVE POLICY RATES BEEN SO PERSISTENTLY LOW IN THE EURO AREA?

FRANK SMETS\*

Short-term money market interest rates in the euro area have been negative since 2014. Those market rates are determined by the interest rates set by the European Central Bank (ECB), as shown in Chart 1. In the environment of excess liquidity that emerged after the global financial crisis (GFC), the deposit facility rate (DFR), the interest rate on overnight deposits that banks hold with the ECB, has acted as a floor for short-term money market rates. The deposit facility rate has been negative since June 2014 and currently stands at  $-50$  bps. Accordingly, money market rates in the euro area have been negative for the last seven years.

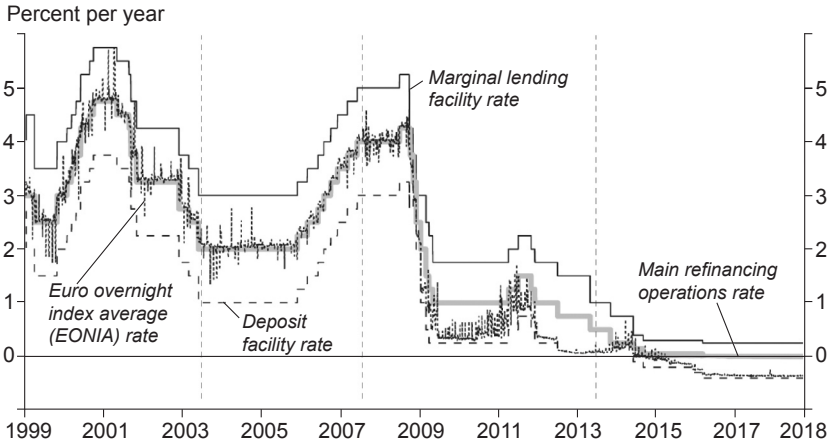
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Why have policy-controlled interest rates been so persistently low? And why haven't they returned to the average pre-crisis level of 3 to 4%? In this essay we argue that persistent disinflationary developments following the GFC in a low equilibrium real interest rate environment have limited the ECB's ability to lower policy rates sufficiently due to the effective lower bound (ELB). Together with the uncertainty and perceived asymmetry in the ECB's inflation target and the initially timid response with unconventional policy measures, such as forward guidance and large-scale asset purchases, this has contributed to less-anchored inflation expectations, which in turn has prolonged the disinflation period and the time spent at the ELB. The new ECB strategy announced on 8 July 2021 recognizes the implications of the ELB for the monetary policy reaction function. It clarifies that price

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**Chart 1**  
**The ECB's Policy Interest Rates**  
**and the Overnight Money Market Rate, 1999-2018**



Source: ECB.

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stability can best be maintained by aiming for a simple, symmetric 2% inflation target. It recognizes that when near the ELB, policy measures need to be especially forceful and persistent to avoid disinflation becoming entrenched and that alternative policy measures, such as large-scale asset purchases, long-term refinancing operations and forward guidance on interest rates, are key to implementing such a forceful and persistent response. It also acknowledges that other policies, such as fiscal policy, can play a useful stabilization role when policy-controlled interest rates are close to the ELB. These lessons have already been applied in response to the pandemic crisis. Fiscal and monetary policy have worked hand in hand to help households and firms bridge the pandemic crisis. As a result, the euro area economy has recovered strongly, scarring effects have so far been minimized, and headline inflation has rebounded strongly due to the surge in energy prices, but also because demand outpaces constrained supply in some sectors. This holds out hope that as the output gap closes and inflation sustainably stabilizes at 2%, in line with the ECB's forward guidance, interest rates will rise again, though likely towards lower positive steady state levels than before the GFC, since the equilibrium real rate is expected to remain low for years to come.

In Section 2 we review the typical interest rate reaction function of the ECB in light of its monetary policy strategy. It explains why interest rates got stuck close to the ELB while the nominal growth environment continued to underperform. In Section 3 we document the fall in the

equilibrium real interest rate,  $r^*$ , and its implications for macroeconomic performance and state-contingent monetary policies at the ELB. Section 4 concludes.

*THE ECB'S MONETARY POLICY STRATEGY:  
A REACTION FUNCTION APPROACH*

To answer the question of why policy-controlled interest rates are so low, it is natural to start from the ECB's monetary policy strategy. The ECB's primary objective as laid down in the Treaty on European Union is to maintain price stability. Until recently, the ECB defined price stability as "a year-on-year increase in the Harmonised Index of Consumer Prices (HICP) for the euro area of below 2%". Within that definition of price stability, the ECB aimed to keep inflation at "below, but close to 2%" (ECB, 2003). While this double-key formulation of the price stability objective was effective in maintaining long-term inflation expectations close to 2% in the inflationary environment of the first decade of the EMU, the ambiguity around the precise inflation target and its perceived asymmetric nature made it less effective when disinflationary forces prevailed following the GFC in 2008 and the sovereign debt crisis in 2010-2011. In the new ECB monetary policy strategy, the formulation has therefore been replaced by a simpler and explicitly symmetric 2% inflation target (ECB, 2021).

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The primary monetary policy instrument is the set of ECB policy rates depicted in Chart 1 (*supra*). The ECB sets these policy-controlled interest rates to ensure that inflation stabilizes at its 2% target in the medium term. The medium-term orientation of monetary policy strategy accounts for the fact that changes in interest rates affect the economy and inflation only with long and uncertain lags. As a result, the ECB cannot control short-term deviations of inflation from the 2% target, but needs to take a forward-looking approach aiming at stabilizing inflation at 2% in the medium-term. This is done by adjusting its monetary policy instruments in response to the changing economic and inflation outlook.

One way of capturing the ECB's reaction function is through the lens of the simple first-difference policy rule proposed by Orphanides (2003). This rule links the change in the main policy rate of the ECB to deviations of the one-year-ahead inflation forecast from the ECB's inflation target ( $\pi_{t+1}^f - \pi^*$ ) and deviations of the one-year-ahead real GDP growth forecast from potential output growth ( $g_{t+1}^f - g^*$ ):

$$\Delta R_t = 0,5(\pi_{t+1}^f - \pi^*) + 0,5(g_{t+1}^f - g^*)$$

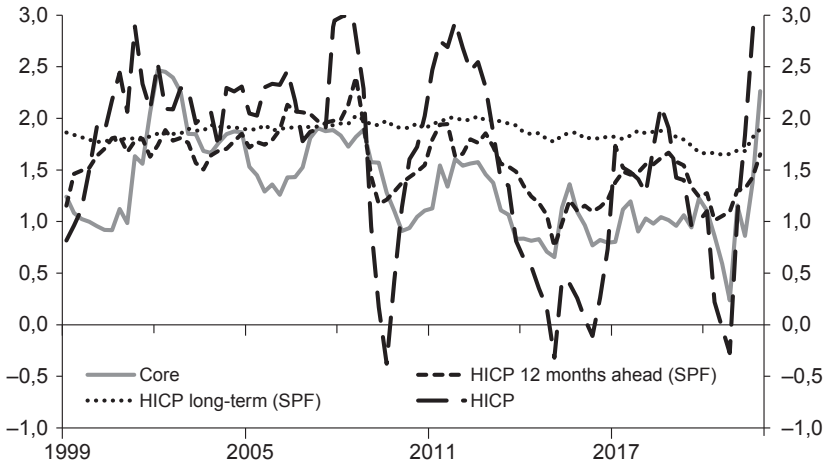
Hartmann and Smets (2019) show that the Orphanides rule has corresponded remarkably well to the ECB's interest rate decisions over the past 20 years. The increase in policy rates in 1999 and 2000 and the subsequent fall, the pause in 2004-2005, the rise starting in 2006, the sharp and large fall in 2008 and 2009, and the slight increase in 2011, as well as the fall in 2012, are all captured fairly well by this simple interest rate reaction function. Not surprisingly, the correspondence was less striking in July 2012, when interest rates reached 0% and only relatively small further reductions into negative territory were deemed feasible due to the effective lower bound.

Hartmann and Smets (2019) show that the good fit of the Orphanides rule holds whether one uses one-year ahead private forecasts from the ECB's Survey of Professional Forecasters (SPF) or the ECB's own macroeconomic projections. They find that one cannot reject the hypothesis that the coefficients are equal to 0.5 on both the inflation forecast and the growth forecast, so the Orphanides rule can be approximated by an expected simple near-term nominal growth rule with a coefficient of 0.5. Hartmann and Smets (2019) also investigated which forecast horizon best explains ECB interest rate decisions and found the one-year ahead forecasts superior to more backward-looking or more forward-looking horizons. This near-term horizon provides a good balance between being anchored in observed data, which enhances verifiability and robustness, and being forward-looking enough to account for transitory shocks and possible measurement error. Finally, Hartmann and Smets (2019) conjecture that there is little else of significance to explain the ECB's interest rate decisions in the past. In other words, the one-year-ahead growth and inflation forecasts appear to be sufficiently good statistics for the wealth of economic, monetary and financial data the ECB analyses to assess the inflation outlook.

We can now use these statistics to explain why policy rates have remained in negative territory and close to the effective lower bound over the last seven years. Chart 2 (below) plots headline and core HICP inflation over the EMU period together with the one-year and five-year ahead SPF inflation forecasts. It shows that since 2013, when short-term money market rates hit the zero-lower bound, the one-year ahead inflation forecast has been persistently below the inflation target of close to 2%. The same has held for core inflation until very recently. The low inflation environment also had an impact on longer-term inflation expectations, as the five-year ahead SPF inflation forecast slipped below 2% by 2013, reaching a minimum of 1.65% shortly after the outbreak of the Covid-2019 pandemic crisis. Similarly, Chart 3 (below) plots real GDP growth together with the one-year and five-year

ahead SPF growth forecasts. The latter can be interpreted as an estimate of the long-term growth potential of the euro area economy. Chart 3 shows that the one-year ahead growth forecast stayed below the potential growth rate until the second half of 2017 and 2018. The positive deviation of growth above its long-run potential in this period was, however, not enough to compensate for the shortfall in the inflation forecast. The Covid-2019 crisis made short-term growth forecasts very erratic and less useful as a sufficient statistic, since the lockdown measures first unexpectedly shut down large parts of the economy and then led to large positive growth forecasts, as it was expected that containment measures would be eased.

**Chart 2**  
**Headline and Core Inflation and SPF Forecasts**



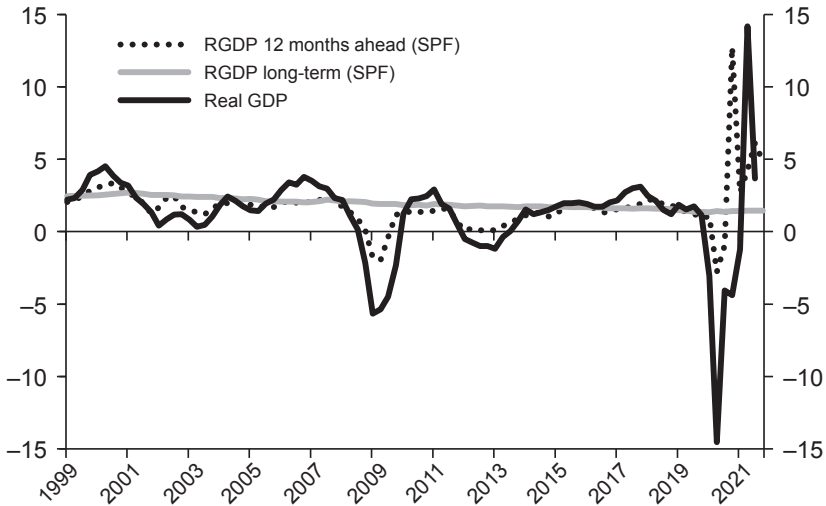
Notes: latest observation: 2021-Q4.

Sources: ECB; SPF.

The subdued growth and inflation outlook since 2013 has required a further easing of monetary policy during a time when money market rates were already bouncing against the zero-lower bound. While the ECB ventured into negative territory as of June 2014, it did so only in smaller steps of 10 bps (base points), reflecting the proximity of an effective lower bound on nominal interest rates (Chart 1 *supra*). At the same time, the ECB took other unconventional policy measures, such as forward guidance on the future path of interest rates, large-scale asset purchases and targeted long-term refinancing operations (TLTROs) to further ease financial conditions and address the disinflationary environment.<sup>1</sup> As a result, the ECB's balance sheet substantially increased during this period. The intensity of these measures varied, however,

with the evolution of the nominal growth outlook. For example, the ECB decided to stop net asset purchases in 2018 when the gap between the expected nominal growth rate and its long-term trend narrowed.

**Chart 3**  
**Euro Area Real GDP Growth and One-Year and Five-Year Ahead SPF**  
**Growth Forecasts**  
 (year-on-year, %)



Notes: latest observation: 2021-Q4.

Sources: ECB; SPF.

So, the simple answer to the question of why policy rates have remained so low since 2013 is that the inflation outlook has remained persistently low. However, this raises a new question: Why was the decline in nominal interest rates to negative values not sufficient to push up nominal spending and eventually allow nominal interest rates to rise again towards the average levels of the pre-global financial crisis period? This is addressed in the next section.

### *THE FALL IN $R^*$ , THE ELB AND PERSISTENTLY LOW INFLATION*

The evidence analyzed during the ECB's monetary policy strategy review (ECB, 2021; Koester *et al.*, 2021) suggests that a combination of interconnected factors is required in order to explain persistently low inflation since 2013. Of direct relevance is the fact that structural developments have lowered the equilibrium real rate of interest – the interest rate consistent with inflation at its target and the economy

operating at its potential – in the euro area and globally. In line with the Fischer equation, a fall in the equilibrium real interest rate reduces the steady-state or long-term nominal interest rate for a given inflation target. In combination with an effective lower bound on the nominal interest rate, this reduces the space available for monetary easing by conventional interest rate policy in the face of disinflationary shocks. It increases the incidence and duration of episodes in which nominal policy-controlled interest rates are close to the effective lower bound, requiring the deployment of additional policy instruments as discussed above.

During the first decade of the EMU, inflation shocks were predominantly to the upside. Since the GFC, there has been a shift towards disinflationary shocks. Cyclical drivers, notably the disinflationary impact of the 2009 and 2012 twin recessions and the emergence of a large output gap and high unemployment, have interacted with ongoing disinflationary structural trends such as globalization, digitalisation and demographic factors, in a context in which the effective lower bound means that those disinflationary shocks cannot easily and sufficiently be offset by interest rate policy. The proximity to the effective lower bound and uncertainty about the effectiveness and side effects of other instruments have restricted the scale and speed of the monetary policy response to those disinflationary shocks, contributing to the persistence of inflation rates below the inflation target. This in turn contributed to lower medium-term inflation expectations, further reinforcing the persistence of the low inflation environment. Moreover, possible ambiguity about the level of the inflation target under the ECB's double-key formulation of the price stability objective and a perception of the objective as being asymmetric may also have contributed to the persistence of low inflation by insufficiently anchoring inflation expectations. Finally, fiscal policies, on the back of debt sustainability concerns, were a drag on growth and inflation in the wake of the sovereign debt crisis.

Chart 4 (below) shows various estimates of  $r^*$  for the euro area from Brand *et al.* (2018). While the uncertainty around the level of  $r^*$  is large, all estimates point to a significant fall of about three percentage points (pp) since the start of the EMU. Brand *et al.* (2018) also survey the determinants of the fall in  $r^*$ , focusing on the euro area. They come to the overall conclusion that three main factors can explain the fall in  $r^*$ . The first factor is the fall in the growth rate of potential output. Indeed, as shown in Chart 3 (*supra*), long-term real growth expectations of the euro area economy have fallen by 1 pp (percentage point) from 2.5% (or higher) at the beginning of the EMU to 1.5% (or lower) most recently. Since the growth rate of the economy is lower, less investment is needed

to maintain the appropriate degree of capital accumulation, putting downward pressure on the equilibrium real interest rate. This effect may have been further exacerbated by the increasing importance of intangible investment. The slowdown in potential growth can explain about one third of the drop in  $r^*$  in the euro area.

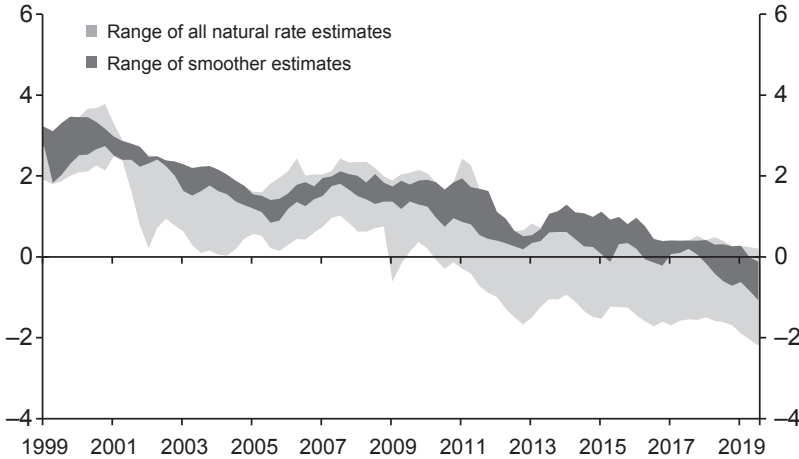
A second significant factor is the ageing population. Since the start of the EMU, life expectancy at birth has increased by four to five years for both men and women, while the old-age dependency ratio (i.e. the share of old-age to working-age population) has increased by almost 10 pp. Lower mortality rates mean that individuals expect to live longer so that *ceteris paribus*, depending on the benefits put in place by pension schemes and assuming foresight, individuals increase their savings in anticipation of a longer retirement period. This may be partly offset if the age composition of the population shifts towards relatively older individuals who are dissaving. Overall, overlapping generation models that incorporate such ageing effects suggest that the ageing population may have contributed between 80 to 100 bps to the drop in  $r^*$  (e.g. Bielecki *et al.*, 2018). A third important factor has been the rise in risk aversion and the greater demand for safe assets, particularly following the GFC, which has resulted in an increasing gap between interest rates on safe assets, such as government bonds, and the rate of return on risky assets and capital.

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These results are broadly confirmed by Marx *et al.* (2021), who perform a comprehensive model-based analysis for the fall in  $r^*$  in the United States and the euro area during the period from the 1980s to the 2010s. For our purpose four findings are worth highlighting. First, the drop in productivity growth and ageing together account for about a 2 pp drop in the level of real rates and the return on capital. Second and interestingly, the model finds that leverage has pushed interest rates up by as much as 2 pp in the U.S. and 3 pp in the euro area. This finding is consistent with the observed increases in public and private debts over the last forty years, but is shown to be less relevant over the past two decades in the euro area. Third, they show that a large increase in the risk aversion of investors is necessary to make sense of the divergence between the risk-free rate and the return on capital. They refer to Guiso *et al.* (2018) for evidence that the trauma effect of the 2008 crisis has increased the risk aversion of a large percentage of investors. Finally, they also point to a drop in the variance of inflation and an increase in the correlation between real and nominal shocks to explain as much as 2 to 3 pp in the drop of the euro area riskless rate from the 1980s to the 2000s. However, the effect of this “hedging” mechanism has declined since 2010, together with the correlation between productivity and inflation shocks.



**Chart 4**  
**Estimates of Euro Area Longer-Run Equilibrium**  
**Real Interest Rate,  $r^*$**   
 (% per annum)



Notes: ranges span point estimates across models to reflect model uncertainty and no other source of  $r^*$  uncertainty. The dark shaded area highlights smoother  $r^*$  estimates that are statistically less affected by cyclical movements in the real rate of interest. Latest observation: 2019Q4.

Source: for references to the underlying studies, see Brand *et al.* (2018).

The above-mentioned studies focus on domestic factors in the drop of the euro area equilibrium real interest. In a largely globalized capital market, the equilibrium real interest rate will of course also be driven by global factors, as shown by Del Negro *et al.* (2019). This may bring other determinants into the picture, such as the rise in inequality in the US as highlighted by Mian *et al.* (2021), or the global savings glut, as emphasized by Bernanke (2005). These factors are, however, unlikely to explain the drop in  $r^*$  in the new millennium.

As mentioned above, a fall in  $r^*$  pushes the equilibrium nominal interest rate down and thereby increases the probability of hitting the ELB in response to disinflationary shocks. This risks inducing a disinflationary bias in the economy, unless the central bank can neutralize the ELB by using alternative monetary policy measures. One of those measures is to promise to keep interest rates low for longer through interest rate forward guidance, reinforcing the low interest rate environment.

Coenen *et al.* (2021) analyze the implications of a lower  $r^*$  for macroeconomic stabilization using the New Area Wide Model-II (NAWM-II), a large-scale DSGE (dynamic stochastic general equilibrium) model of the euro area economy. Model-based stochastic simulations provide a rich laboratory for studying the efficacy of state-

dependent forward guidance, state-dependent asset purchases and state-dependent fiscal stimulus when episodes during which nominal rates are stuck at their effective lower bound are much more frequent. The findings suggest that, if left unaddressed, the lower bound can cause substantial macroeconomic distortions. They confirm that in the current environment, with historically low nominal and real interest rates, the ELB can amplify the impact of adverse shocks on inflation and GDP growth, leading to elevated deflation and recession risks and noticeable downward biases in the respective predictive distributions. The larger the detrimental effects due to the lower bound, the lower the equilibrium real interest rate: as the equilibrium real rate falls from 2% to 0%, the frequency of lower-bound episodes rises from 10.3% to 24.0%, and the Root Mean Squared Deviations (RMSDs) for inflation and the output gap increase from 2.9% and 6.0% to 4.2% and 8.6%, respectively. These inflated RMSDs reflect both sizeable shortfalls in the means of the respective steady-state distributions (i.e. a disinflationary bias), as well as markedly higher standard deviations, and can help explain the persistent low inflation environment in the euro area since the GFC.

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Regarding the stabilization effects of the different state-dependent policies, forward guidance on interest rates, if fully credible, is found to be most powerful and can largely undo the distortions due to the lower bound. Such strong forward guidance may not be realistic, though, given also the “forward-guidance puzzle” of New Keynesian dynamic stochastic general equilibrium (DSGE) models (Del Negro *et al.*, 2019), which concerns the often implausibly major effects of forward guidance within this class of models. But a combination of a weaker form of forward guidance with limited credibility, large-scale asset purchases, as well as fiscal stimulus, is almost equally effective, especially when asset purchases can enhance the credibility of the forward-guidance policy through a signaling effect. In the long run, with a permanently lower equilibrium real interest rate and recurrent long-lived lower-bound episodes, a combination of all three policies is needed to materially reduce the lower-bound distortions. For an equilibrium real rate equal to zero, the combination of policies results in a marked reduction in the average RMSD for inflation and in the output gap from 6.4% to 4.6%, even though noticeable shortfalls in the respective means persist. In accordance with the “low-for-longer” prescription of the forward-guidance policy, the time the short-term nominal rate stays at the lower bound rises from 24% to about 31% and the average duration of lower-bound episodes increases from around 9.5 to 17.5 quarters. The average amount of assets purchased is reasonable, as is the average size of the fiscal stimulus, but the

ultimate amount of asset purchases needed can still be substantial in extreme circumstances, with asset holdings exceeding 45% of annual GDP even when fiscal stimulus of more than 3% of GDP helps to keep them contained.

### CONCLUSION

Why have policy rates been so persistently low in the euro area? In line with the findings of the ECB's monetary policy strategy review, we have argued that the global low equilibrium real interest rate environment and the presence of an effective lower bound on nominal interest rates have limited the ability of conventional interest rate policy to respond to disinflationary demand and supply shocks following the sovereign debt crisis. Together with the initially timid use of alternative policy measures, this has led to a persistent low inflation environment with less-anchored inflation expectations and policy rates stuck at the lower bound. The new ECB monetary policy strategy recognizes the importance of taking into account the implications of the ELB in its reaction function. When the economy is close to the lower bound, effective monetary policy requires especially forceful and persistent monetary policy measures to avoid negative deviations from the inflation target becoming entrenched. The more persistent use of accommodative monetary policy may also imply a transitory period in which inflation is moderately above target. In September 2021, the ECB translated the need for persistence in a revised formulation of its forward guidance. The first signs of the impact of the new strategy are encouraging, since both the one-year and five-year ahead SPF inflation forecasts have moved closer to the 2% inflation target. This supports the expectation that, in line with ECB forward guidance, eventually policy-controlled interest rates may leave negative territory and converge at their new steady state. However, the level of that steady state remains uncertain. Current estimates of  $r^*$  between 0% and -1% and an inflation target of 2% suggest a moderately positive level between 1% and 2%. A number of factors, such as the positive impact of accelerated digitalization on euro area productivity growth and the rise in public and private investment driven by the Next Generation EU plan may put upward pressure on  $r^*$ . But if higher private debt in the post-pandemic period leads to more inequality and higher savings and if the pandemic crisis and climate change are associated with higher risk aversion,  $r^*$  may fall further. Fortunately, the Orphanides rule discussed in section 2 does not rely on estimates of  $r^*$ , and policy-controlled interest rates will naturally evolve to the level consistent with stabilization of nominal growth around a level consistent with potential growth and the 2% inflation target.

## NOTE

1. See Hartmann and Smets (2019) and Rostagno *et al* (2022) for a detailed description of ECB monetary policy in this period.

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# A QUALIFIED DEFENSE OF FUNCTIONAL FINANCE: SECULAR STAGNATION, GROWTH AND INFLATION

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**I**n the same way as streams meet to form major rivers, the sum of new issues is bringing back major macroeconomic questions. Uncertainty about growth, inflation, productivity, unemployment and more generally about people's participation in the labour market are all issues, some of them new, that are added to an already long list. Names are emerging to characterise the situation: *secular stagnation, stagflation, reflation*<sup>1</sup>. All of them only imperfectly grasp the current situation. The purpose of this paper is to identify the seven economic issues of the current period and to then list some policy conclusions thereof. The economic policy put forward herein can be summarised in a few words. It is a measured rehabilitation of functional finance, which is a promotion of fiscal policy as a tool for economic stabilisation, but also of inflation and the affirmation of the secondary, but essential, role of monetary policy.

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## *INFLATION AND GROWTH: THE SEVEN ECONOMIC ISSUES*

The concept of secular stagnation was introduced to account for persistently low growth and inflation in an environment where nominal interest rates were close to zero (Hansen, 1938; Summers, 2013). The return of inflation in the post-Covid period is raising new fears.

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However, more than inflation, it is the new mechanisms at work that are essential to shape the renewal of economic policy. Is inflation a supply, demand, or preference shift issue? This section presents seven new causalities affecting inflation and growth, from the most cyclical causalities to the most structural ones.

*Supply constraints and production problems  
during the Covid period*

Firstly, the Covid crisis shows that economies can run into supply constraints in specific sectors or for certain goods. The strong recovery period that followed the end of the restrictive measures in most countries highlighted the bottleneck of raw materials and energy when demand abruptly picks up. Inflation in these products (21.6% annual inflation in France in November 2021, according to Insee) spread to all goods as they are essential in the value chains, with a rise in production prices of almost 16% in France in January. The increase in prices allows for an adjustment in demand and this mechanism is assumed to be transient as it is linked to temporary supply constraints. However, the persistence and consequences of such inflation remain a source of much debate and economists partly fear a return to a period of persistence due to the spread of price increases throughout the productive fabric. The analysis of inflation must therefore move from macroeconomics to sectoral economics.

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*Strong recovery and excess savings*

The Covid period has so far been shaped by strong support from countries for household income to maintain an adequate level of demand (more than \$5.5 trillion for the various American plans, more than \$250 billion for the “whatever it takes” plan in France). After the sovereign debt crisis triggered by austerity measures in 2010, governments opted for a more Keynesian approach to fiscal policy during the pandemic, whether in Europe, Japan or the US. Massive stimulus packages were put in place to keep the economy afloat, which also led to a sharp rise in public debt. As a result of these monetary injections, demand could be stabilised or even increased, as in the United States, for example, where the level of consumption in 2021 slightly exceeded that of 2019, contributing to accelerating inflation. However, the full effects of the stimulus packages on the economy are still unknown. In particular, household savings rates remain at high levels in most developed economies, a lasting symptom of secular stagnation. In France, the OFCE has estimated excess savings in 2020 at nearly €160 billion (OFCE, 2021). The stakes in terms of household dissaving are therefore high. Partial dissaving would increase inflation by 1% according to conservative estimates (OFCE, 2021).

### *Changes in labour market preferences*

The Covid-19 crisis has changed how the labour market works, probably in a lasting way with a new appreciation of the hardship of certain positions. This is reflected, for example, in a massive wave of resignations in the United States, with 4.3 million resignations in August 2021, representing a turnover rate of 2.9%, i.e. half a percentage point above its pre-crisis level according to the Bureau of Labor Statistics. In France, wage demands from key trades and the hotel and catering industry show the current tensions. While these adjustments are legitimate and the expression of social preferences that are indisputable to economists, they result in strong differences in nominal wage increases. The issue that emerges from this development on the labour market is the potential separation of the wage-price spiral, which generates inflation and is therefore undesirable, from the adjustment of relative wages between sectors, which is necessary for the proper allocation of human resources. This medium- and long-term issue is crucial as it determines the dynamics of inflation and therefore the stabilisation of economies.

### *The role of the wage-price spiral in inflation*

In the 1960s and 1970s, the dynamics of inflation are shaped by the wage-price spiral, which is driven by wage indexation. In times of inflation, households are not victims of nominal illusions and are aware that their purchasing power is decreasing for the same income. Price rises therefore generate wage demands that lead to nominal wage increases with minimal actual impact. The increase in labour costs is then quickly passed on to prices again, fuelling inflationary pressures. While this relationship is now questionable in European countries or Japan where wages are less indexed than in the past, the dynamics of U.S. wages suggest that this spiral may also be contributing to US inflation. In the post-Covid period, the question of the second-round effect of wage increases on prices is therefore essential to identify the risks of self-perpetuating inflation.

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### *Low nominal interest rates followed by low real interest rates*

One of the most enduring symptoms of secular stagnation is undoubtedly low nominal interest rates, which are now constrained by the effective lower bound (ELB). Lowering interest rates into very negative territory being impossible, central banks are having to use new unconventional monetary policies (quantitative easing, forward Guidance, etc.) to stimulate investment by facilitating access to credit. The problem with the ELB is that nominal interest rates cannot decrease

and therefore, real interest rates are too high in relation to the economic situation, even if they are already low.

The return of inflation is shifting debate. Indeed, it is likely that interest rates will not rise by more than inflation in the coming quarters, suggesting persistently low real interest rates (Ragot, 2021). Thus, the forthcoming rise in nominal interest rates does not invalidate active investment and debt management policies, which are justified by low real interest rates that are lower than the economy's growth rate (see Blanchard, 2021, for details). As a result, fiscal policy is playing an increasing role in regulating our economies, but we will come back to this point in part two.

### *Uncertainty over productivity*

Since the contributions summarised by Gordon (2016), the dynamics of productivity have been under scrutiny. Although the technological discoveries of the third Industrial Revolution have considerably modified lifestyles (means of communication, computers, Internet, etc.), they have only marginally increased productivity compared to the innovations that led to the “forward leap” between 1920 and 1970. The Covid crisis and the generalisation of remote working will permanently change the use of digital tools in companies, but the effect on work productivity is still unknown. The impact on innovation is even more uncertain. As a result, all current economic discussions must be conducted with uncertain growth, probably reduced because of the climate challenges.

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### *Regulation and investment for energy transition*

The final key issue in the current macroeconomic environment, which is also crucial for the long-term outlook, is investment in the energy transition. The scientific consensus on climate change calls for action to change the way we produce energy and build a more sustainable economy. In this context of climate urgency, the net effect of the transition is also debated. On the one hand, increased investment in the relevant areas will translate into a positive demand shock that should help boost production (double-dividend concept, see Freire-Gonzalez, 2019, for a meta-analysis). On the other hand, the likely inflation of certain costs suggests a negative supply shock in the energy sector, which may spill over to all consumer goods (Pisani-Ferry, 2021) and thus inflation. Managing environmental regulation and energy transition is therefore one of the most complex economic policy challenges of the 21<sup>st</sup> century, if not the most complex one.

These seven elements change the growth and inflation outlook in the same way as the standard secular stagnation approach. Monetary and fiscal policies need to adapt to this new environment, with a clear orientation towards the rehabilitation of fiscal policy.



## *RETHINKING ECONOMIC POLICY*

Current debates are revisiting the respective roles of monetary and fiscal policy in economic stabilisation. These debates are crucial for the definition of the mission of central banks, as well as for the size of desirable government deficits (or surpluses).

### *The old paradigm: monetary policy, above all*

The macroeconomic stabilisation of inflation and unemployment is first and foremost thought to be the objective of monetary policy. In the United States, macroeconomic stabilisation is primarily the responsibility of monetary policy, which has a dual mandate: the Fed's objective is to stabilise inflation but also to maintain the full employment of production factors.

These two objectives are generally perceived to be close or even similar because of the joint movement of economic growth and inflation, the so-called Phillips curve: higher economic growth and lower unemployment translate into inflationary pressures. The relative instability of this relationship, however, calls the similarity of these objectives into question. The discussions on the flattening of the Phillips curve (Occhino, 2019) concern the fact that inflation appears to be more independent of changes in economic growth than in the past. In other words, inflation varies little while unemployment fluctuates significantly. If the two objectives are no longer as closely aligned as in the past, this means that a new trade-off is emerging. The central bank can accept more inflation to bring the economy closer to full employment by lowering real interest rates to boost the economy.

In the euro area, the ECB's sole mandate is price stability. It was recently defined as a symmetrical objective around two percent annual average inflation in the euro area<sup>2</sup>. The issue of full employment of production factors is therefore not the ECB's main objective. It can of course contribute to this as a secondary objective, but the ECB cannot contribute to a reduction in unemployment if this requires inflation to rise above its target. The reduction of unemployment must therefore be the objective of other policies.

What alternative policies for full employment? To summarise, there are two possible directions. The first assigns the objective of full employment of production factors to structural reforms. In the case of unemployment, labour market reforms are put forward. The paradigmatic example of this policy is the reduction of unemployment in Germany in the early 2000s. While the unemployment rate was 12% in 2005, labour market reforms, unemployment benefits and the definition of possible types of employment contracts (minijobs) contri-

buted to bringing unemployment down to less than 7% ten years later, among other factors. These structural policies can also be educational policies aimed at providing young people with qualifications, as it is known that the heterogeneity of unemployment according to qualifications is high. This first direction is justified if unemployment is structural rather than cyclical.

The second direction is to give the objective of full employment in the business cycle to fiscal policy, which handles aggregate demand. This orientation consists in promoting countercyclical fiscal policies, which make public debt fluctuate around a well-defined anchor. These policies do not, of course, advocate a permanent increase in public debt, but an intentional fluctuation.

The European Multiannual Financial Framework initially favoured the structural approach with set criteria of deficit and debt under the Maastricht Treaty. As European institutions gradually learned about cyclical instabilities, the treaties moved towards integrating more countercyclical fiscal policies, which can be described as Keynesian policies. To accept the cyclical part of the deficits, the notions of output gap or structural deficits were introduced at the cost of making the European Multiannual Financial Framework more complex (Martin *et al.*, 2021).

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Thus, the European movement is shifting towards greater acceptance of countercyclical fiscal policy. As a result, central bankers have regularly called for more expansionary fiscal policy (Draghi, 2018). Empirical evidence on the inflationary effect of fiscal policies is scant but consistent. Another reason for the use of fiscal policy in the euro area is the wide range of economic situations between countries. A single monetary policy cannot fit all countries, a counter-cyclical fiscal policy allows for idiosyncratic national factors. Finally, it is often noted that these effects depend on exchange rate developments, which complicates the analysis for the US but simplifies it for the euro area (Geerolf, 2021).

In summary, the old consensus asserts the central role of monetary policy for price stability but also for the overall stabilisation of the business cycle. Fiscal policy is residual, but potentially important for the ELB or in a heterogeneous monetary area. In the context of the famous Tinbergen principle, which identifies an instrument with a tool, the assignment is clear: inflation monetary policy, residual full employment, fiscal or structural policy.

### *Rethinking the role of macroeconomic policy*

The paradigm shift is based on an affirmation of the central role of fiscal policy for economic stabilisation but also inflation, and a secon-

dary role for monetary policy. Before a more general formulation, it is first necessary to consider concrete policies:

1 – an initial argument in favour of the role of fiscal policy for inflation is, as mentioned earlier, the assertion of the role of fiscal policy in raising inflation when monetary policy is constrained. The European debate on austerity policies (i.e. for the quick decrease of public deficits) and the risk of deflation shows that the role of fiscal policy is symmetrical: an expansionary fiscal policy favours higher inflation, a restrictive policy decreases inflation. The importance of fiscal policy, conditional on limits to monetary policy, is now a consensus. This role is also the result of models known as New Keynesian, which emphasise nominal rigidities and the role of inflation expectations (Michau, 2018). It is also the result of the simplest Keynesian models, of the AD-AS type, in which price increases follow a shift of the demand curve;

2 – the important question is the role of fiscal policy on the cycle when monetary policy is unconstrained, i.e. when the effective bound is not reached. In this area, analyses are evolving. Before putting forward economic elements, let us read some of the views. An interesting example is the recent proposal by Philip R. Lane<sup>3</sup>, member of the ECB's Executive Board, made in his personal capacity. Lane proposes that EU public deficit rules allow countries with inflation below the 2 % target to slow down the pace of fiscal consolidation, so that fiscal policy helps countries achieve their inflation targets. Then, after others, he proposes to slow down the pace of debt reduction implied by the current treaties to avoid deflationary biases in some countries;

3 – a second example of the positive effect of fiscal policy on inflation is, of course, the US situation mentioned above. The massive support plans for the US economy have led to public deficit approaching 15% in 2021. On this stimulated consumption, which led to a rise in prices, it is not the nature of the effect that is debated, but its magnitude. For Larry Summers the US budget plans are highly inflationary, while other economists, such as Paul Krugman<sup>4</sup>, expect lesser effects;

4 – the two previous examples discussed the positive fiscal effects on inflation. Can negative effects be claimed? Here, an essential discussion needs to be initiated. If in the coming quarters excess savings accumulated by households during the Covid period were spent, representing more than 7% of GDP in additional demand in developed countries (OFCE, 2021), should the response be monetary or fiscal? If a shock of positive demand were to occur, it would be legitimate for the resulting increased tax revenues to contribute at the same time to reducing demand and inflation and deleveraging the governments having financed the increase in private savings with public debt. Thus,

the budgetary tool for the management of aggregate demand and inflation is symmetrical; it serves to fight both against increases and decreases in effective demand.

### *A modern functional finance?*

After these elements, it is necessary to return to the most powerful formulation of the central role of fiscal policy in the business cycle. It was developed in 1943 by American economist Abba Lerner who coined the term functional finance.

Lerner argues that fiscal policy must handle the business cycle and inflation, while the role of monetary policy is to make active fiscal policy possible by buying public debt to help the government budget. This theory abides by Tinbergen's principle but reverses the instruments: fiscal policy deals with inflation and monetary policy with the state budget!

This recommendation highlights a new reality. The first is the role of fiscal policy in the dynamics of inflation, which the examples above have shown to be relevant. The second is the role of central banks in managing interest rates of public debt, and thus the role in the sustainability of public debt.

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In its condensed form, functional finance is too extreme. The problem is not so much the essential role of fiscal policy, but the strictly residual role of monetary policy. The issue of the wage-price spiral and the self-sustaining drift of inflation expectations cannot be controlled by fiscal policy. It is up to monetary policy to anchor inflation expectations in a sustainable way, by asserting a long-term target and moving interest rates in a consistent manner. Thus, the role of monetary policy is not residual but essential to anchor inflation expectations. This rehabilitation of monetary policy, however, poses a fundamental problem, which is that of determining who is in charge of what: The practice mentioned above therefore indicates that fiscal policy should be in charge of inflation. What is at stake is therefore an institutional exit from the Tinbergen principle to give both fiscal and monetary policy monetary guidelines.

### *Political implications*

These general principles lead to adjustments of the rules and principles of economic policy. One practical implication is that the central bank's mandate should include support for economic activity, which is the mandate of the Fed. This institutional change would mean that support for economic activity would evolve from a secondary objective to a full-fledged objective. The second implication is that the macroeconomic rules governing European fiscal policies should have explicit

objectives to support economic growth but also inflation, which radicalises Philip Lane's proposal.

The objective is therefore twofold. It consists in separating institutions by instruments (monetary policy on the one hand, fiscal policy on the other), rather than by objectives. Then, it consists in giving the two institutions a dual mandate of economic stabilisation and management of inflationary pressures. On this last point, it must be acknowledged that central banks will have a role in anchoring long-term expectations.

The second implication is to return to the subject of fiscal policy, the description of which was deliberately abstract at this stage. A relevant criticism of Functional Finance is the somewhat naive discussion of fiscal policy. These have strong redistributive effects, and the idea that taxes or public spending can be made to vary over the business cycle to achieve an inflation target is unrealistic<sup>5</sup>: the legitimate time for political debate does not coincide with the time for monetary policy, which can be immediate, due to the operational independence of central banks. An empirical assessment of this challenge is provided by Bénassy-Quéré *et al.* (2016). The authors show that discretionary fiscal policy measures are on average pro-cyclical (i.e. the tax burden increases during recessions and decreases during booms), in contrast to the automatic effect of the existing tax system which is linked to activity (VAT, corporate tax the yield of which decreases in a recession).

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Therefore, the rehabilitation of fiscal policy must be understood by clearly separating the 'normal' business cycle from the economic crisis. In normal times, the rehabilitation of fiscal policy should, as far as possible, be embedded in fiscal regulation (such as taxes on pro-cyclical bases, or significant transfers or economic cycle). At European level, the EUR 100 billion SURE unemployment reinsurance project is an interesting example, which could be extended. In times of crisis, additional *ad hoc* support is needed, as in 2009 and 2020. Explicit analysis of the relevance of these tools to stabilise inflation is therefore necessary.

### *IN CONCLUSION, THE LONG-TERM ASPECT AND ENERGY TRANSITION*

The previous section discussed the more cyclical aspects related to the discussion on secular stagnation, which is the evolution of inflation. The second part of the debate concerns the medium-term growth outlook. The debate is deeply renewed by the issue of energy transition. More than the level of productivity, the new issue of economic policy is the transformation of the productive fabric to reduce CO<sub>2</sub> emissions and fight against climate change. It is important to separate the issue

of the long term from that of cycle management, which we tried to do in the previous section. For example, the net effect on growth and employment of energy transition investments alone is under discussion, as mentioned above. In this area, it is important to remember that the role of investments must first be to reduce CO<sub>2</sub> emissions. The investment-driven business cycle must be managed by other components of fiscal policy and by monetary policy. For this reason, investments for the energy transition are not intended to get out of secular stagnation but to reduce CO<sub>2</sub> emissions.

Low real interest rates encourage the financing of part of the energy transition investment through debt rather than taxes, which has a positive effect on business and inflation. However, it would be prudent to consider these investments independently of the cyclical stabilisation of the economy, as the stakes are so high.

## NOTES

1. For example, see speech of Isabel Schnabel, <https://www.ecb.europa.eu/press/key/date/2021/html/ecb.sp211117-78f0a1f435.en.html>.
2. See the ECB's statement: [https://www.ecb.europa.eu/home/search/review/html/ecb.strategyreview\\_monopol\\_strategy\\_statement.en.html](https://www.ecb.europa.eu/home/search/review/html/ecb.strategyreview_monopol_strategy_statement.en.html).
3. See <https://www.ecb.europa.eu/press/key/date/2021/html/ecb.sp211112-739d3447ab.en.html>.
4. See for example a summary here: <https://www.nytimes.com/2021/12/16/opinion/inflation-economy-2021.html>.
5. See for example the opinion of Paul Krugman: <https://www.nytimes.com/2019/02/12/opinion/whats-wrong-with-functional-finance-wonkish.html>.

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THE NEED  
FOR NEW DOCTRINES,  
NEW MONETARY  
STRATEGIES



# THE MONETARY POLICY STRATEGY OF THE EUROPEAN CENTRAL BANK

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The European Central Bank (ECB) published its new monetary policy strategy statement in July 2021. The strategy review process was launched in January 2020 but was interrupted by the pandemic. Over 2020-2021, the Governing Council held eleven seminars to discuss the individual topics of the review. In turn, these discussions drew on a considerable work effort across the Eurosystem: there were thirteen workstreams and the many individual background notes are synthesised in the eighteen occasional papers that were released in Autumn 2021.<sup>1</sup> The strategy review also benefited from the earlier phases in the development of the ECB's monetary policy strategy, both in terms of the initial design in 1998 and the 2003 review.<sup>2</sup>

The strategy review exercise had three broad objectives, within the context of meeting the ECB's Treaty mandate.<sup>3</sup> First, while the Treaty mandate is to deliver price stability, it is important to have a clear operational target for monetary policy. In particular, it was necessary to assess whether the aim identified in the 2003 review (below, but close to, 2%) should be revised. Second, for any given target, the policy approach and policy instruments to deliver the target also should be reviewed on a regular basis, given the implications of various structural changes for the conduct of monetary policy. Third, climate change and

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The views expressed in this article are personal. The monetary policy strategy review exercise benefited from the dedication and expertise of a large group of staff at the ECB and across the Eurosystem, together with the inputs from many academics and other external observers. Thanks to Fabian Eser and Christophe Kamps for comments and Janina Desoi for her assistance in preparing this article.

the carbon transition are set to exert first-order influences on macroeconomic outcomes (with attendant implications for nominal developments) in the coming years, such that a forward-looking monetary policy strategy should incorporate these considerations.

In what follows, I focus on these three elements. First, I discuss the inflation target. Second, I discuss the setting of monetary policy to deliver this target. Third, I outline the approach adopted to incorporate climate change and the carbon transition.

### *THE INFLATION TARGET*

The new strategy aims for 2% inflation over the medium term. It takes a symmetric perspective on deviations from this target: overshoots and shortfalls are viewed as equally undesirable.

This target replaces the previous aim of delivering inflation “below, but close to, 2%”, which had been adopted in the 2003 review. It also supersedes the 1998 formulation by which price stability was defined as a year-on-year increase in the HICP of below 2% (that is the definition of price stability corresponded to an inflation rate bounded between 0% and 2%). Rather, the new monetary policy strategy is based on a qualitative general definition: price stability can be viewed as a state in which changes in the general level of prices need not be factored into consumption and investment decisions. In turn, price stability can best be achieved by aiming to stabilize inflation at 2% over the medium term.

One basic reason for adopting a specific target is that it makes for clearer communication. More generally, the strategy review identified the importance of a simpler communication style as highly desirable. In addition to providing a clearer anchor for inflation expectations, a strategic commitment to simplifying the communication of monetary policy also makes it easier to hold the ECB accountable and to build trust with the general public.<sup>4</sup>

The strategy review assessed that the three long-standing arguments in favour of a positive inflation target (as opposed to simply trying to keep the price level constant) remain valid.<sup>5</sup> These are: (1) measurement bias in constructing price indices; (2) downward nominal wage rigidity; and (3) the facilitation of real exchange rate adjustments within a multi-country monetary union. Indeed, the severe macroeconomic impact of the twin crises episode (the global financial shock during 2008-2009 and the euro area sovereign debt crisis during 2010-2012) provides robust evidence that nominal rigidities are pervasive and that relative price adjustment across member countries is inhibited by a low inflation environment.<sup>6</sup>

Moreover, the case for a positive inflation buffer has been reinforced by the trend decline in the equilibrium real interest rate: this was not a factor in the 2003 review but was a central theme in the 2021 review.<sup>7</sup> In general, the constraint of the effective lower bound means that there is an inverse relation between the equilibrium real interest rate and the optimal inflation target: over the cycle, monetary policy space is protected by ensuring that the steady-state nominal interest rate is high enough to enable monetary policy to respond effectively to adverse shocks. In turn, the steady-state nominal interest rate is simply the sum of the equilibrium real interest rate and the inflation target: all else equal, if the former declines, the latter should be raised. Directionally, it follows that the case for a 2% inflation target compared to a lower target has been reinforced by the trend decline in the equilibrium real interest rate. An additional consideration is that in the context of an integrated global economy and global financial system, the exact value of the inflation target should take into account the inflation targets of other major central banks. Inflation targets that are broadly similar mean that if the targets are met, trends in nominal exchange rates should broadly reflect trends in real exchange rates.

In terms of the symmetry of the inflation target, the recognition that shortfalls and overshoots are equally undesirable is important for monetary policy. In addition to clarifying that 2% should be viewed as the focal point (rather than a ceiling), the symmetry of the target means that risks to the inflation target in both directions should be seen as equally undesirable, which in turn should be incorporated in a risk-management approach to the calibration of monetary policy. Accordingly, the symmetry of the target does not necessarily imply symmetry in policy responses to these risks, in view of the effective lower bound: I will return to this topic in the next section of this article.

Finally, the strategy review also concluded that, while the Harmonised Index of Consumer Prices (HICP) remains the appropriate price measure for assessing the achievement of the price stability objective, its measurement should be revised to more fully include the costs related to owner-occupied housing, based on the net acquisition approach. Since this is only possible in the context of a multi-year project (led by Eurostat), the Governing Council will in the meantime take into account inflation measures that include initial estimates of owner-occupied housing costs in its wider set of supplementary inflation indicators. Moreover, it is recognised that, in principle, monetary policy decisions should, as far as possible, differentiate between the consumption and investment components of the owner-occupied housing price index, since it is the former component that is relevant.

*DELIVERING THE INFLATION TARGET*

The strategy commits the ECB to ensuring that inflation stabilizes at its 2% target over the medium term. Although the target is symmetric, the effective lower bound means that policy reactions to negative and positive shocks should not necessarily be symmetric.<sup>8</sup> In particular, when the economy is close to the lower bound (either as a result of a sequence of adverse shocks or simply due to a sufficiently-low equilibrium real interest rate such that even the steady-state nominal interest rate is close to the lower bound), monetary policy measures should be especially forceful or persistent to avoid negative deviations from the inflation target becoming entrenched. Adopting forceful or persistent measures may also imply a transitory period in which inflation is moderately above target, since a persistently-accommodative stance that successfully lifts inflation towards the target may involve hump-shaped adjustment dynamics for the inflation path.

Starting at the steady state, an initially-forceful response to a negative shock can limit the risk of approaching the effective lower bound. Adopting a forceful reaction function stands in contrast to an incrementalist approach to policy easing measures, which is based on the supposition that it is possible to take further easing measures if the initial steps prove to be insufficient. The effective lower bound limits the scope for incrementalism. In turn, maintaining some policy measures on a persistent basis represents an acknowledgement that a commitment to maintaining monetary policy accommodation into the future can provide a partial substitute for sharper near-term policy easing measures.

In terms of the policy instruments that can be deployed to deliver the target, the set of policy interest rates take primacy and should be sufficient so long as the economy is not operating in the shadow of the effective lower bound and if financial conditions are non-stressed. In this respect, the lowering of policy rates into negative territory has been an effective way to expand the policy space. In addition, forward guidance can play an important role in underpinning a persistent policy stance if the effective lower bound is a constraint. Additional reinforcement can be provided by asset purchase programmes and (targeted) longer-term refinancing operations.<sup>9</sup> Moreover, these different instruments have proven to reinforce each other. More generally, the ECB will continue to respond flexibly to new challenges as these arise and consider, as needed, new policy instruments in the pursuit of its price stability objective. At any given point in time, the optimal mix of instruments should be designed to take into account the relative effectiveness and the side effects of each instrument.<sup>10</sup>

The design of monetary policy measures in the shadow of the effective lower bound is well illustrated by the revised interest rate forward guidance that was announced by the ECB in the wake of the new monetary policy strategy.<sup>11</sup> It describes three key conditions that should be met before interest rates are raised: (1) the first condition “until we see inflation reaching 2% well ahead of the end of our projection horizon” provides reassurance that the convergence of inflation towards the new target should be sufficiently advanced and mature at the time of policy rate lift off. Moreover, requiring the inflation target to be reached “well ahead of the end of the projection horizon” helps to hedge monetary policy against the risk of reacting to forecast errors, which tend to be larger at longer horizons; (2) the second condition that we expect inflation to reach 2% not only well ahead of the end of the projection horizon but also “durably for the rest of the projection horizon” telegraphs that reaching the inflation target should be lasting and not just the result of short-lived forces that lead to one-time increases in prices, unlikely to lead to persistently higher year-over-year inflation; and (3) the third condition “progress in underlying inflation is sufficiently advanced to be consistent with inflation stabilizing at 2% over the medium term” signals that policy rates should not be lifted unless underlying inflation is also judged to have made satisfactory progress towards the target. This condition is based on realized data and provides an extra safeguard against a policy tightening in the face of cost-push shocks that might elevate headline inflation temporarily but fade within the projection horizon. It is important to keep in mind that underlying inflation is a broad concept and refers to the persistent component of inflation that filters out short-lived reversible movements in the inflation rate and provides the best guide to the medium-term inflation developments.

The new rate forward guidance is motivated by the importance of robustness in making good policy decisions and seeks to balance two considerations. First, it is appropriate to put a significant weight on realized progress in underlying inflation. In a world of myriad forms of uncertainty in relation to the size and propagation of shocks, various structural changes, the quality and timeliness of data and the design and calibration of models, it makes sense to take into account data outcomes, rather than exclusively rely on multi-year forecasts.<sup>12</sup> This consideration is especially pertinent in the neighbourhood of the effective lower bound, in view of the importance of avoiding tightening decisions that could turn out to be premature, resulting in a weakening of inflation dynamics and a de-anchoring of inflation expectations to the downside. At the same time, temporary shocks mean that the realized data may not provide a sufficiently-accurate guide: the detec-

tion of underlying inflation (the persistent component that is the relevant guide for future inflation developments) is subject to considerable uncertainty, especially during non-standard episodes (such as the current pandemic).

Second, given the limitations of realized inflation outcomes, it would be unwise to fail to take into account forward-looking information, as captured in macroeconomic projections and other indicators, despite the inherent difficulties in making forecasts. In one direction, if current inflation is below the target level but the forecasts indicate that the inflation target will be reached within the projection horizon, waiting for realized inflation to climb to the target before tightening might be excessively costly, especially if inflation expectations become de-anchored to the upside. Under this scenario, excessive delay in monetary tightening runs the risk of a sharper subsequent hike in interest rates and a greater loss in output. In the other direction, if current inflation is above the target level but the forecasts indicate that inflation will fall below the target level over the projection horizon (as was the case in the December 2021 projections), tightening policy in response to temporarily-high inflation would be counterproductive.

Accordingly, the rate forward guidance strikes a balance between outcome-based and forecast-based indicators. It follows that the successful implementation of this rate forward guidance will require expert judgement by the Governing Council. Amongst other factors, humility is required in assessing the dynamics of inflation expectations. In general, it is well known that the properties of macroeconomic models are quite sensitive to the exact process determining the formation of inflation expectations (see, amongst many others, Honkapohja and McClung, 2021). In the context of the euro area, the short history of the euro area as a monetary union, together with the diverse longer-term historical inflation experiences of the different member countries, further complicate the assessment of inflation expectations.

In line with the Treaty mandate and without prejudice to price stability, the medium-term orientation allows for inevitable short-term deviations of inflation from the target, as well as lags and uncertainty in the transmission of monetary policy to the economy and to inflation. It also provides room for monetary policy to take into account considerations such as balanced economic growth, full employment and financial stability. Under many scenarios, balanced economic growth, full employment and price stability are mutually consistent objectives. In particular, so long as longer-term inflation expectations are anchored at the target level, inflation will be at the target level if economic activity and employment are equal to their potential levels. However, in the event of an adverse supply shock, the horizon over



which inflation returns to the target level could be lengthened in order to avoid pronounced falls in economic activity and employment, which, if persistent, could jeopardise medium-term price stability.<sup>13</sup>

In view of the price stability risks generated by financial crises, there is a clear conceptual case for the ECB to take financial stability considerations into account in its monetary policy deliberations.<sup>14</sup> At a general level, the conceptual case has received much attention in the research literature in recent years (see, amongst others, Woodford, 2012; Smets, 2014; Woodford, 2016; Akinici *et al.*, 2020; Stein 2021).

It is worthwhile to highlight some fundamental issues in thinking about the inter-relation between monetary policy and financial stability. First, macroprudential policies can do much to mitigate financial stability risks.<sup>15</sup> Any analysis of the potential inter-relation between monetary policy and financial stability should be conditioned on the prevailing macroprudential policy stance, at both national and area-wide levels. Since the implementation of macroprudential policy in Europe is relatively recent, there is only a limited span of data to guide the empirical assessment of the effectiveness of macroprudential policy and the implications for optimal monetary policy. At the same time, the modelling of monetary policy should take into account the impact of the macroprudential policy framework.

Second, financial stability considerations are most easily incorporated if inflation expectations are robustly anchored at the target. Otherwise, there is a risk that any monetary policy move motivated by financial stability considerations could de-anchor inflation expectations, with possibly substantial long-term consequences for the effective delivery of the inflation target.

Third, proximity to the effective lower bound reduces the scope of the traditional argument that monetary policy easing in response to a financial crisis may be more efficient than preventive tightening: this implies that, conceptually, there may be scenarios in which there is indeed a tension between price stability over the traditional monetary policy horizon (up to three years) and price stability over longer horizons (the financial cycle is typically assessed as about twice that length).

At the same time, it is easier to identify this potential trade off at a conceptual level than to pin down the exact circumstances in which the longer-horizon risk might call for a monetary policy adjustment. In particular, especially since financial crises are rare events, it is difficult to design and calibrate macro-financial models that at the same time are capable of capturing business cycle fluctuations (including inflation dynamics) and financial cycle fluctuations.<sup>16</sup> Moreover, the quantita-

tive effectiveness of monetary policy measures in materially mitigating financial stability risks requires careful assessment, especially in view of the role of other factors (such as the level of the equilibrium real rate, leverage dynamics and investor beliefs) in driving asset prices and investment patterns. Moreover, holding fixed its impact on price stability, the quantitative impact of a monetary policy measure on financial stability has to be assessed side-by-side with its impact on other factors, such as employment.

For these reasons, it is important to adopt a context-specific approach in taking account of financial stability considerations. Any monetary policy reaction to financial stability concerns will depend on prevailing circumstances and will be guided by the implications for medium-term price stability. It should also be recognized that monetary policy can take into account financial stability considerations through the design of policy instruments, even if the monetary policy stance is unaffected. Currently, the design of the tiering system and the exclusion of residential mortgages from the eligible loan pool for TLTROs are partly motivated by financial stability considerations.

The ECB's December 2021 monetary policy statement included an assessment of the interrelation between monetary policy and financial stability.<sup>17</sup> It identified that an accommodative monetary policy underpins growth, which supports the balance sheets of companies and financial institutions, as well as preventing risks of market fragmentation. At the same time, it is recognised that the impact of accommodative monetary policy on property markets and financial markets warrants close monitoring as a number of medium-term vulnerabilities have intensified. Still, macroprudential policy remains the first line of defense in preserving financial stability and addressing medium-term vulnerabilities.

This assessment is one component of a more general commitment under the new monetary policy strategy to base monetary policy decisions, including the evaluation of the proportionality of its decisions and potential side effects, on an integrated assessment of all relevant factors.<sup>18</sup> Compared to the previous two-pillar analytical approach, there is an emphasis under the new integrated framework on taking into account the inherent macro-financial links between the real economy, the monetary system and the financial system in terms of the underlying structures, shocks and adjustment processes. The strategy review provided an important opportunity to review priorities for research and model development, especially given the structural changes observed since the last review in 2003.<sup>19</sup>

An important type of macro-financial risk in the euro area is that, under stressed conditions, self-fulfilling cross-border flight-to-safety

episodes can impair the monetary policy transmission mechanism and threaten price stability. This is an inherent risk in a multi-country monetary union, since geographical portfolio shifts are facilitated by the absence of currency risk (compounded by the incomplete nature of the EMU architecture in relation to fiscal union and banking union) and can be reinforced by the lack of country-specific monetary policy instruments.<sup>20</sup> Although monetary policy can be implemented in a uniform way most of the time, the ECB has demonstrated its capacity to design flexible instruments in reaction to stressed conditions through policy responses such as the Securities Market Programme (SMP), the Outright Monetary Transactions (OMT) Programme and the Pandemic Emergency Purchase Programme (PEPP).

At the December 2021 monetary policy meeting the Governing Council decided to end net asset purchases under the PEPP by the end of March 2022, but the monetary policy statement also stated: “Within our mandate, under stressed conditions, flexibility will remain an element of monetary policy whenever threats to monetary policy transmission jeopardise the attainment of price stability.” In addition to this general recognition of the value of flexibility under stressed conditions, the monetary policy statement also noted that, even after the end of net purchases, the accumulated PEPP portfolio can play a stabilising role: “In particular, in the event of renewed market fragmentation related to the pandemic, PEPP reinvestments can be adjusted flexibly across time, asset classes and jurisdictions at any time.”

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### *CLIMATE CHANGE AND THE CARBON TRANSITION*

The carbon transition represents a major structural change for the global and European economies, with a significant economic transformation embedded in the commitments to significantly reduce carbon emissions by 2030 and attain net zero by 2050.<sup>21</sup> In principle, a sustained and predictable transition might be accomplished without significant macroeconomic volatility. However, both the physical risks and transition risks related to climate change may generate cyclical shocks that could require a monetary policy response. Indeed, in recent years, it has already proven important to take into account in our macroeconomic assessments both severe weather events that disrupt global production (such as floods and droughts around the world) and the implications of the carbon transition for industries such as the automotive sector. In addition, there are tail risk scenarios in which severe physical shocks or disorderly transition dynamics could threaten financial stability. At an institutional level, climate change and the carbon transition also affect the value and the risk profile of the assets held on the Eurosystem’s balance sheet.

For these reasons, the Governing Council has committed to an ambitious action plan to further include climate change considerations in its monetary policy framework.<sup>22</sup> First, the ECB will significantly enhance its analytical and macroeconomic modelling capacities and develop statistical indicators to foster the understanding of the macroeconomic impact of climate change and carbon transition policies. In particular, the ECB will accelerate the development of new models and will conduct theoretical and empirical analyses to monitor the implications of climate change and related policies for the economy, the financial system and the transmission of monetary policy through financial markets and the banking system to households and firms. Second, the Governing Council will adapt the design of its monetary policy operational framework in relation to disclosures, risk assessment, corporate sector asset purchases and the collateral framework.

### CONCLUSION

The 2021 strategy review lays the foundations for monetary policy decisions in the coming years. At the same time, a commitment to a regular review cycle provides assurance that the monetary policy framework will not become fossilised.<sup>23</sup> Already, it is clear that some incipient trends may call for further revisions in the coming years. These include: possible advances in terms of a digital currency; improvements in the EMU architecture; the increasing role of non-banks in the euro area financial system. More generally, there may also be unanticipated economic or financial shocks to the euro area and/or global economies; and additional structural changes that affect the potential output growth, the equilibrium real interest rate or the inflation process. Against this background, the Governing Council intends to assess periodically the appropriateness of its monetary policy strategy, with the next assessment expected in 2025.

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### NOTES

1. In addition to the formal monetary policy strategy statement ([https://www.ecb.europa.eu/home/search/review/html/ecb.strategyreview\\_monpol\\_strategy\\_statement.en.html](https://www.ecb.europa.eu/home/search/review/html/ecb.strategyreview_monpol_strategy_statement.en.html)), the Governing Council also published an explanatory overview note ([https://www.ecb.europa.eu/home/search/review/html/ecb.strategyreview\\_monpol\\_strategy\\_overview.en.html](https://www.ecb.europa.eu/home/search/review/html/ecb.strategyreview_monpol_strategy_overview.en.html)). This article draws on this overview note. The intellectual context for the review was also informed by prior studies, including Hartmann and Smets (2018) and Rostagno *et al.* (2021).

2. See Issing (2010).

3. See Ioannidis *et al.* (2021) on the mandate of the ECB.

4. See Work stream on Monetary Policy Communications (2021). The modernisation of monetary policy communication is already evident in the structure of the monetary policy statement that is released after each monetary policy meeting (replacing the introductory statement), together with the roll out of visual formats for the key messages in the monetary policy decisions.

5. See Consolo *et al.* (2021), Work Stream on Price Stability Objective (2021) and Work Stream on Inflation Measurement.
6. See also Koester *et al.* (2021) for an analysis of the drivers of low inflation during the 2013-2019 post-crisis period.
7. See, for instance, Andrade *et al.* (2019).
8. See Work Stream on Price Stability Objective (2021).
9. As was evident in Spring 2020, asset purchasing can also play an important market stabilization role under stressed conditions.
10. See Altavilla *et al.* (2021). The optimal monetary policy response should also take into account the stance of fiscal policy and the cyclical stance of macroprudential and supervisory policy measures. As detailed in the report of the Work stream on monetary-fiscal policy interactions (2021), the strategy review included an extensive analysis of monetary-fiscal interactions, concluding that countercyclical fiscal policy (underpinned by sustainable fiscal positions) can be especially effective in the neighbourhood of the lower bound. During the pandemic, countercyclical macroprudential and supervisory measures amplified the support from countercyclical monetary and fiscal measures.
11. See also Lane (2021a).
12. See Faust and Leeper (2015).
13. See Work Stream on Employment (2021).
14. See Work Stream on Macroprudential Policy, Monetary Policy and Financial Stability (2021).
15. See also Martin and Philippon (2017) and Lane (2021b).
16. For the current state-of-the-art in this area, see Adrian *et al.* (2021).
17. Under the new strategy, it is planned that in-depth assessments of the interrelation between monetary policy and financial stability will be conducted twice a year (in June and December), in alignment with the calendar for the ECB's Financial Stability Review. The December 2021 assessment was the first in this series.
18. See Holm-Hadulla *et al.* (2021).
19. See Work Stream on Monetary-Fiscal Policy Interactions (2021), Work Stream on Non-Bank Financial Intermediation (2021), Work Stream on Productivity (2021), Work Stream on Eurosystem Modelling (2021), Work Stream on Digitalization (2021), Work Stream on Globalization (2021) and Work Stream on Inflation Expectations (2021).
20. See, amongst many other contributions, Bianchi and Mondragon (2021).
21. See Network for Greening the Financial System (2020), McKibbin *et al.* (2021) and Work Stream on Climate Change (2021).
22. A more detailed description of the ECB action plan is available at [https://www.ecb.europa.eu/press/pr/date/2021/html/ecb.pr210708\\_1-f104919225.en.html](https://www.ecb.europa.eu/press/pr/date/2021/html/ecb.pr210708_1-f104919225.en.html).
23. In any event, it is also essential for the ECB to pay attention on a continuous basis to external assessments of its strategy. See, for example, Reichlin *et al.* (2021).

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# THE FEDERAL RESERVE'S NEW FRAMEWORK: CONTEXT AND CONSEQUENCES

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This paper discusses the Federal Reserve's new framework and highlights some important policy implications that flow from the revised consensus statement and the new strategy. In particular, it first discusses the factors that motivated the Federal Reserve in November 2018 to announce it would undertake in 2019 the first-ever public review of its monetary policy strategy, tools, and communication practices. It then considers the major findings of the review as codified in our new Statement on Longer-Run Goals and Monetary Policy Strategy and highlights some important policy implications that flow from them.

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## *MOTIVATION FOR THE REVIEW*

As the Federal Open Market Committee (FOMC) indicated from the outset, the fact that the Federal Reserve System chose to conduct this review did not indicate that we believed we had been poorly served by the framework in place since 2012. Indeed, I would argue that over the 2012-2020 period, the framework served us well and supported the

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This paper builds on Clarida (2020a, 2020b, 2021a, 2021b, and 2021c). The views expressed in this paper are my own and not necessarily those of other Federal Reserve Board members or Federal Open Market Committee participants. The author is grateful to Burcu Duygan-Bump and Chiara Scotti for help in preparing this paper, to Kate Lassiter, Ethan Lewis, Nicholas von Turkovich and Laura Wilcox for excellent research assistance and to Christopher Karlsten for outstanding editing help. All errors are the author's own responsibility.

Federal Reserve's efforts after the global financial crisis (GFC) first to achieve and then, for several years, to sustain – until cut short in the spring of 2020 by the Covid-19 pandemic – the operation of the economy at or close to both our statutorily assigned goals of maximum employment and price stability in what became the longest economic expansion in U.S. history. Nonetheless, both the U.S. economy and, equally importantly, our understanding of the economy have clearly evolved along several crucial dimensions since 2012, and we believed that in 2019 it made sense to step back and assess whether, and in what possible ways, we might refine and rethink our strategy, tools, and communication practices to achieve and sustain our goals as consistently and robustly as possible in the global economy in which we operate today and for the foreseeable future.<sup>1</sup>

Perhaps the most significant change since 2012 in our understanding of the economy has been the substantial decline in estimates of the neutral real interest rate,  $r^*$ , that, over the longer run, is consistent with our maximum-employment and price-stability mandates. Whereas in January 2012 the median FOMC participant projected a long-run  $r^*$  of 2.25% and a neutral nominal policy rate of 4.25%, as of December 2021, the median FOMC participant projected a long-run  $r^*$  equal to just 0.5%, which implies a neutral setting for the federal funds rate of 2.5%.<sup>2</sup> Moreover, as is well appreciated, the decline in neutral policy rates since the GFC is a global phenomenon that is widely expected by forecasters and financial markets to persist for years to come.<sup>3</sup>

The substantial decline in the neutral policy rate since 2012 has critical implications for monetary policy because it leaves the FOMC with less conventional policy space to offset adverse shocks to aggregate demand. This development, in turn, makes it more likely that recessions will impart elevated risks of more persistent downward pressure on inflation and upward pressure on unemployment that the Federal Reserve's monetary policy should, in design and implementation, seek to offset throughout the business cycle and not just in downturns themselves.<sup>4</sup>

Two other, related developments that have also become more evident than they appeared in 2012 are that price inflation seems less responsive to resource slack, and also, that estimates of resource slack based on historically estimated price Phillips curve relationships are less reliable and subject to more material revision than was once commonly believed.<sup>5</sup> For example, in the face of declining unemployment rates that did not result in excessive cost-push pressure to price inflation, the median of the Committee's projections of  $u^*$  – the rate of unemployment consistent in the longer run with the 2% inflation objective – has been repeatedly revised lower, from 5.5% in January 2012 to 4% as of

the December 2021 Summary of Economic Projections (SEP).<sup>6</sup> Projections of  $u^*$  by the Congressional Budget Office and professional forecasters show a similar decline during this same period and for the same reason.<sup>7</sup> In the past several years of the previous expansion, declines in the unemployment rate occurred in tandem with a notable and welcome increase in real wages that was accompanied by an increase in labor's share of national income, but not a surge in price inflation to a pace inconsistent with our price-stability mandate and well-anchored inflation expectations. Indeed, this pattern of mid-cycle declines in unemployment coincident with noninflationary increases in real wages has been evident in the U.S. data since the 1990s.<sup>8</sup>

With regard to inflation expectations, there is broad agreement among academics and policymakers that achieving price stability on a sustainable basis requires that inflation expectations be well anchored at the rate of inflation consistent with the price-stability goal. The pre-GFC academic literature derived the important result that a credible inflation-targeting monetary policy strategy that is not constrained by the effective lower bound (ELB) can deliver, under rational expectations, inflation expectations that themselves are well anchored at the inflation target.<sup>9</sup> In other words, absent a binding ELB constraint, a policy that targets actual inflation in these models delivers long-run inflation expectations well anchored at the target “for free.” But this “copacetic coincidence” no longer holds in a world of low  $r^*$  in which adverse aggregate demand shocks are expected to drive the economy in at least some downturns to the ELB. In this case, economic analysis indicates that flexible inflation-targeting monetary policy cannot be relied on to deliver inflation expectations that are anchored at the target, but instead will tend to deliver inflation expectations that, in each business cycle, become anchored at a level below the target.<sup>10</sup> This downward bias in inflation expectations under inflation targeting in an ELB world can in turn reduce already scarce policy space – because nominal interest rates reflect both real rates and expected inflation – and it can open up the risk of the downward spiral in both actual and expected inflation that has been observed in some other major economies.

Inflation expectations are, of course, not directly observed and must be imperfectly inferred from surveys, financial market data, and econometric models. Each of these sources contains noise as well as signal, and they can and sometimes do give contradictory readings. But, at minimum, the failure of actual PCE (personal consumption expenditures) inflation – core or headline – over the 2012-2020 period to reach the 2% goal on a sustained basis cannot have contributed favorably to keeping inflation expectations anchored at 2%. Indeed, my reading of

the evidence during this period is that the various measures of inflation expectations I follow resided at the low end of a range I consider consistent with our 2% inflation goal.

### *THE NEW STATEMENT AND STRATEGY*

On August 27, 2020, the FOMC unanimously approved a revised Statement on Longer-Run Goals and Monetary Policy Strategy that represents a robust evolution of its monetary policy framework.<sup>11</sup>

There are six key elements behind our new framework and the forward guidance provided since the September 2020 FOMC statement. Five of these elements define how the Committee will seek to achieve its price-stability mandate over time, while the sixth pertains to the Committee's conception of its maximum-employment mandate. Of course, the Committee's price-stability and maximum-employment mandates are generally complementary, and, indeed, this complementarity is recognized and respected in the forward-guidance language introduced in the September 2020 FOMC statement.<sup>12</sup> However, for ease of exposition, I will begin by focusing on the five elements of the new framework that define how the Committee will seek to achieve over time its price-stability mandate:

- the Committee expects to delay liftoff from the ELB until PCE inflation has risen to 2% on an annual basis and other complementary conditions, consistent with achieving this goal on a sustained basis and to be discussed later, are met<sup>13</sup>;

- with inflation having run persistently below 2%, the Committee will aim to achieve inflation moderately above 2% for some time in the service of having inflation average 2% over time and keeping longer-term inflation expectations well anchored at the 2% longer-run goal<sup>14</sup>;

- the Committee expects that appropriate monetary policy will remain accommodative for some time after the conditions to commence policy normalization have been met<sup>15</sup>;

- policy will aim over time to return inflation to its longer-run goal, which remains 2%, but not below, once the conditions to commence policy normalization have been met<sup>16</sup>;

- inflation that averages 2% over time represents an *ex ante* aspiration of the FOMC, but not a time-inconsistent *ex post* commitment.<sup>17</sup>

As I highlighted in Clarida (2020b, 2021a), I believe that a useful way to summarize the framework defined by these five features is temporary price-level targeting (TPLT, at the ELB) that reverts to flexible inflation targeting (once the conditions for liftoff have been reached). Just such a framework has been analyzed by Bernanke *et al.*

(2019) and Bernanke (2020), who in turn build on earlier work by Reifschneider and Williams (2000), Eggertsson and Woodford (2003) and Evans (2012), among many others.

A policy that delays liftoff from the ELB until a threshold for average inflation has been reached is one element of a TPLT strategy. Starting with our September 2020 FOMC statement, we communicated that inflation reaching 2% is a necessary condition for liftoff from the ELB.<sup>18</sup> The FOMC also indicated in these statements that the Committee expects to delay liftoff until inflation is “on track to moderately exceed 2% for some time”. What “moderately” and “for some time” mean will depend on the initial conditions at liftoff (just as they do under other versions of TPLT), and the Committee’s judgment on the projected duration and magnitude of the deviation from the 2% inflation goal will be communicated in the quarterly SEP for inflation.

Our new framework is asymmetric. That is, as in the TPLT studies cited earlier, the goal of monetary policy after lifting off from the ELB is to return inflation to its 2% longer-run goal, but not to push inflation below 2%, and the desired pace of return to 2% can reflect considerations other than the 2% longer-run goal for inflation that are relevant to the Committee’s mandate. In the case of the Federal Reserve, we have highlighted that making sure that inflation expectations remain anchored at our 2% objective is just such a consideration. I follow closely the Fed staff’s index of common inflation expectations (CIE) – which is now updated quarterly on the Board’s website – as a relevant indicator that this goal is being met.<sup>19</sup> Other things being equal, my desired pace of policy normalization post liftoff to return inflation to 2% would be somewhat slower than otherwise if the CIE index at the time of liftoff is below the pre-ELB level.

Our framework aims *ex ante* for inflation to average 2% over time but does not make a commitment to achieve *ex post* inflation outcomes that average 2% under any and all circumstances. The same is true for the TPLT studies I cited earlier. In these studies, the only way in which average inflation enters the policy rule is through the timing of liftoff itself. Yet in stochastic simulations of the FRB/US model under TPLT with a one-year memory that reverts to flexible inflation targeting after liftoff, inflation does average very close to 2% in the stochastic simulations reported in Bernanke *et al.* (2019). The model of Mertens and Williams (2019) delivers a similar outcome: Even though the policy reaction function in their model does not incorporate an *ex post* makeup element, it delivers a long-run (unconditional) average rate of inflation equal to target by aiming for a moderate inflation overshoot away from the ELB that is calibrated to offset the inflation shortfall caused by the ELB.

*THE NEW FRAMEWORK AND MAXIMUM EMPLOYMENT*

An important evolution in our new framework is that the Committee now defines maximum employment as the highest level of employment that does not generate sustained pressures that put the price-stability mandate at risk.<sup>20</sup> As a practical matter, this definition means that, when the unemployment rate is elevated relative to my SEP projection of its long-run level, monetary policy should, as before, continue to be calibrated to eliminate such employment shortfalls as long as doing so does not put the price-stability mandate at risk. Indeed, since our September 2020 FOMC statement, we have indicated that we expect it will be appropriate to keep the federal funds rate in the current 0 to 25 basis point target range until inflation has reached 2% (on an annual basis) and labor market conditions have reached levels consistent with the Committee's assessment of maximum employment. In our new framework, when, in a business cycle expansion, labor market indicators return to a range that, in the Committee's judgment, is broadly consistent with its maximum-employment mandate, it will be data on inflation itself that policy will react to, but going forward, policy will not tighten solely because the unemployment rate has fallen below any particular econometric estimate of its long-run natural level.

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This guidance has an important implication for the Taylor-type policy reaction function I will consult. In particular, I will continue – as I have done since joining the Fed – to consult policy rules that respect the Taylor principle as a benchmark for calibrating the pace and destination of policy rate normalization once, after the inflation and employment thresholds have been reached, the process of policy normalization commences. Consistent with our new framework, the relevant policy rule benchmark I will consult after the conditions for liftoff have been met is an inertial Taylor-type rule with a coefficient of zero on the unemployment gap, a coefficient of 1.5 on the gap between core PCE inflation and the 2% longer-run goal, and a neutral real policy rate equal to my SEP projection of long-run  $r^*$ . As discussed earlier, the degree of inertia in the benchmark rule I consult will depend on initial conditions at the time of liftoff, especially the reading of the staff's CIE index relative to its February 2020 level. Such a reference rule, which becomes relevant once the conditions for policy normalization have been met, is similar to the forward-looking Taylor-type rule for optimal monetary policy derived in Clarida *et al.* (1999). The stability properties of Taylor-type rules in dynamic stochastic general equilibrium models have been studied by Bullard and Mitra (2002) and Galí (2008), among others, and they show that for the standard Taylor

coefficient of 1.5 on the inflation gap and a coefficient of zero on the unemployment gap, the rational expectations equilibrium is unique for standard parametrizations.

*IMPLICATIONS FOR MONETARY POLICY  
IN THE CURRENT MACRO ENVIRONMENT*

As of December 2021, indicators of economic activity and employment reveal that the U.S. economy has continued to strengthen following the catastrophic collapse in economic activity in the first half of 2020 as a result of the global pandemic and the mitigation efforts put in place to contain it. Real gross domestic product (GDP) rose at a strong 6.5% pace in the first half of 2021, and growth is widely expected to continue at a robust, though somewhat slower, pace in the second half of the year. If so, GDP growth in the 2021 calendar year could be the fastest since 1983, despite a surge in Covid-19 cases in the summer and supply chain bottlenecks that held back economic activity in the third quarter.

Core PCE inflation since February 2020 – a calculation window that smooths out any base effects resulting from “round trip” declines and rebounds in the price levels of Covid-19 sensitive sectors and, coincidentally, also measures the average rate of core PCE inflation since hitting the ELB in March 2020 – was running at a 3% annual pace through October 2021, and that reading is well above what I would consider to be a moderate overshoot of our 2% longer-run goal for inflation. Fully reopening the \$20 trillion economy is essentially taking longer and has cost more than it did to shut it down. In particular, the reopening has been characterized by significant sectoral shifts in both aggregate demand and supply, and these shifts have been causing widespread bottlenecks and triggering substantial changes in the relative price and wage structure of the economy. A similar reopening dynamic has been playing out in other advanced economies, such as Canada and the United Kingdom. As these relative price adjustments work their way through the economy, measured inflation rises. But I continue to believe that the underlying rate of inflation in the U.S. economy is hovering close to our 2% longer-run objective and, thus, that the unwelcome surge in inflation in 2021, once these relative price adjustments are complete and bottlenecks have unclogged, will in the end prove to be largely transitory under appropriate monetary policy. Looking ahead, I note that, as shown in the most recent SEP, released in December 2021, inflation is projected to remain above 2% in all years of the projection window. As such, the SEP median inflation

projections for 2022 and 2023 are pointing to an inflation forecast that looks to be “on track to moderately exceed 2% for some time”, the threshold specified in the FOMC statement.

As with overall economic activity, conditions in the labor market have also continued to improve. Job gains as measured by the payroll survey have continued to be robust over the past few months. Labor market progress this year, as measured by the Kansas City Fed’s Labor Market Conditions Indicators, has been notable, with this index of 24 labor market indicators closing its shortfall relative to its pre-pandemic level. Nonetheless, factors related to the pandemic, such as caregiving obligations and ongoing fears of the virus, continue to weigh on employment and participation. Thus, the course of the labor market and, indeed, that of the economy continue to depend on the course of the virus, though my expectation today is that the labor market by the end of 2022 will have reached my assessment of maximum employment if the unemployment rate has declined by then to the SEP median of modal projections of 3.5%.

Given this outlook and so long as inflation expectations remain well anchored at the 2% longer-run goal – which, based on the Fed staff’s CIE index, I judge at present to be the case and which I project will remain true over the forecast horizon – commencing policy normalization in 2022 would, under these conditions, be entirely consistent with our new flexible average inflation targeting framework. I note that under the December 2021 SEP median of modal projections, annualized PCE inflation since the new framework was adopted in August 2020 is projected to average 3.6% through year-end 2022 and 3.2% through year-end 2023.

In the context of our new framework, while the ELB can be a constraint on monetary policy, the ELB is not a constraint on fiscal policy, and appropriate monetary policy under our new framework, to me, must – and certainly can – incorporate this reality. Indeed, under present circumstances, I judge that the support to aggregate demand from fiscal policy – including the roughly \$2 trillion in accumulated excess savings accruing from (as yet) unspent transfer payments – in tandem with appropriate monetary policy, can fully offset the constraint, highlighted in our Statement on Longer-Run Goals and Monetary Policy Strategy, that the ELB imposes on the ability of an inflation-targeting monetary policy, acting on its own and in the absence of sufficient fiscal support, to restore, following a recession, maximum employment and price stability while keeping inflation expectations well anchored at the 2% longer-run goal.<sup>21</sup>



## CONCLUSION

The Federal Reserve's new flexible average inflation targeting framework is a combination of TPLT at the ELB with flexible inflation targeting, to which TPLT reverts once the conditions to commence policy normalization articulated in our September 2020 FOMC statement have been met. In this sense, our new framework indeed represents an evolution, not a revolution. Importantly, even as the economy we face now looks different than when we set out to do the framework review, we think the new framework is set to serve us well. While supply and demand imbalances related to the pandemic and the reopening of the economy are contributing to elevated levels of inflation at the moment, several of the factors that motivated the review still stand, including the substantial decline in estimates of the  $r^*$ . The FOMC is committed to using all available tools, including threshold-based forward guidance as well as large-scale asset purchases, to achieve the price-stability and maximum-employment goals specified in our new consensus statement.

## NOTES

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1. For a discussion of the elements that motivated the launch of the review and of how the previous policy framework had served us, see Clarida (2020a). See also Powell (2020).
2. The most recent Summary of Economic Projections, released following the conclusion of the September 2021 FOMC meeting, is available on the Board's website at <https://www.federalreserve.gov/monetarypolicy/fomccalendars.htm>. See Chair Powell's address in Jackson Hole, Wyoming (Powell, 2020), for an illustration of the revisions to the macroeconomic projections – including for the longer-run neutral federal funds rate – of FOMC participants as well as private and public forecasters. The downward revisions to  $r^*$  over time have been informed, in part, by the general fall in interest rates and by econometric evidence that suggests that this fall is of a permanent rather than a cyclical nature. See, among many contributors, Hamilton *et al.* (2016), Laubach and Williams (2016), Del Negro *et al.* (2017), Johannsen and Mertens (2018), and López-Salido *et al.* (2020). For discussions of the various factors that might have contributed to this fall, see Fischer (2016) and Rachel and Smith (2017).
3. For evidence on the global nature of the decline in  $r^*$ , see King and Low (2014), Holston *et al.* (2017), Wynne and Zhang (2018), and Del Negro *et al.* (2019). For a discussion of global considerations for U.S. monetary policy, see Obstfeld (2020).
4. For pre-GFC discussions of the macroeconomic consequences of policy rates being constrained by the ELB, see Krugman (1998), Eggertsson and Woodford (2003), and Adam and Billi (2007). For the GFC and its aftermath, using a time-series approach, Eberly *et al.* (2020) estimate that, in the absence of the ELB constraint, the labor market recovery would have proceeded at a significantly more rapid pace than was observed, whereas core inflation would have been only modestly higher because of inflation's limited sensitivity to resource slack. Using a DSGE (dynamic stochastic general equilibrium) approach, the mean estimates of Gust *et al.* (2017) suggest that a binding ELB accounted for about 30 percent (roughly 2% points) of the 6% contraction in GDP in 2009 relative to the peak in 2007 and was responsible for an even larger fraction of the ensuing slow recovery.
5. For evidence of a flattening of the slope of the Phillips curve in the United States and abroad, see, among others, Simon *et al.* (2013), Blanchard *et al.* (2015) and Pfajfar and Roberts (2018). The

difficulties in assessing shortfalls from maximum employment using measures of the unemployment rate have motivated researchers to explore alternative approaches. See Abraham *et al.* (2020) for an approach based on the job search and matching framework. See also the staff discussion of various concepts of unemployment rate benchmarks by Crump *et al.* (2020), which was prepared as part of background materials for the framework review.

6. The large degree of uncertainty attached to estimates of  $r^*$ , of  $u^*$ , the slope of the (short-run) Phillips curve, and other key economic objects adds additional risk-management considerations in the conduct of monetary policy, especially in a low  $r^*$  environment in which the federal funds rate is likely to be constrained by the effective lower bound. See Powell (2019) for a discussion of the implications for monetary policy and Clarida (2020a). See also the model-based analyses of Erceg *et al.* (2018), Ajello *et al.* (2020), and Hebden *et al.* (2020).

7. See Powell (2020) for an illustration. See also Caldara *et al.* (2020) for a discussion of how repeated surprises in macroeconomic forecasts affect inference about the appropriate stance of policy.

8. See Clarida (2016, 2019), Heise *et al.* (2020), and Feroli *et al.* (2021) for discussions.

9. See Bernanke *et al.* (1999) for a review of the considerations that led to the adoption of inflation-targeting frameworks and the early international experience. See Svensson (1997), Clarida *et al.* (1999), and Woodford (2003) for conceptual treatments of inflation targeting, including of rational expectations.

10. See Bianchi *et al.* (2019) and Mertens and Williams (2019).

11. The Statement on Longer-Run Goals and Monetary Policy Strategy is available on the Board's website at <https://www.federalreserve.gov/monetarypolicy/review-of-monetary-policy-strategy-tools-and-communications-statement-on-longer-run-goals-monetary-policy-strategy.htm>.

12. The September 2020 FOMC statement says: "The Committee decided to keep the target range for the federal funds rate at 0 to ¼ percent and expects it will be appropriate to maintain this target range until labor market conditions have reached levels consistent with the Committee's assessments of maximum employment and inflation has risen to 2 percent and is on track to moderately exceed 2 percent for some time." (paragraph 4). The statement is available on the Board's website at <https://www.federalreserve.gov/monetarypolicy/fomccalendars.htm>.

13. The Statement on Longer-Run Goals and Monetary Policy Strategy articulates the inflation objective: "The Committee reaffirms its judgment that inflation at the rate of 2 percent, as measured by the annual change in the price index for personal consumption expenditures, is most consistent over the longer run with the Federal Reserve's statutory mandate." (paragraph 4). The September 2020 FOMC statement indicates the conditions for liftoff (see note 12).

14. The September 2020 FOMC statement reads: "With inflation running persistently below this longer-run goal, the Committee will aim to achieve inflation moderately above 2% for some time so that inflation averages 2% over time and longer-term inflation expectations remain well anchored at 2%." (paragraph 4). A similar sentence appears in the Statement on Longer-Run Goals and Monetary Policy Strategy.

15. The September 2020 FOMC statement reads: "The Committee seeks to achieve maximum employment and inflation at the rate of 2% over the longer run. With inflation running persistently below this longer-run goal, the Committee will aim to achieve inflation moderately above 2% for some time so that inflation averages 2% over time and longer-term inflation expectations remain well anchored at 2%. The Committee expects to maintain an accommodative stance of monetary policy until these outcomes are achieved." (paragraph 4).

16. The Statement on Longer-Run Goals and Monetary Policy Strategy articulates the inflation objective (see note 13).

17. The Statement on Longer-Run Goals and Monetary Policy Strategy says: "In order to anchor longer-term inflation expectations at this level, the Committee seeks to achieve inflation that averages 2% over time, and therefore judges that, following periods when inflation has been running persistently below 2%, appropriate monetary policy will likely aim to achieve inflation moderately above 2% for some time." (paragraph 4).

18. This condition refers to inflation on an annual basis. TPLT with such a one-year memory has been studied by Bernanke *et al.* (2019).

19. See Ahn and Fulton (2020) for a discussion of the CIE index and Ahn and Fulton (2021) for a link to the regular update.

20. The Statement on Longer-Run Goals and Monetary Policy Strategy articulates this concept with the following: “The maximum level of employment is a broad-based and inclusive goal that is not directly measurable and changes over time owing largely to nonmonetary factors that affect the structure and dynamics of the labor market. Consequently, it would not be appropriate to specify a fixed goal for employment; rather, the Committee’s policy decisions must be informed by assessments of the shortfalls of employment from its maximum level, recognizing that such assessments are necessarily uncertain and subject to revision. The Committee considers a wide range of indicators in making these assessments” (paragraph 3).

21. For a theoretical analysis of the fiscal and monetary policy mix at the ELB, see Woodford and Xie (2020). For studies of the government expenditure multiplier at the ELB, see Christiano *et al.* (2011), Eggertsson (2011) and Woodford (2011).

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# THE CHALLENGES OF A MORE DEMANDING ENVIRONMENT ON MONETARY POLICY

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Monetary policy has played a decisive role in buffering the effects of the last two global crises that occurred in 2007-09 and 2020 in advanced countries. It has also made it possible to safeguard the integrity of the euro area. This is Mario Draghi's famous "Whatever it takes". This power and effectiveness of monetary policy are implicitly reflected in the mantra of central bankers over the past decade: "monetary policy is not the only game in town". This limitation is intended to protect central banks from excessive expectations which, by distancing them from their mandate, could undermine their credibility. But it should not prevent them from helping to tackle the challenges ahead: rising public debt, slowing potential growth, climate change, rising inequality, and digitalisation. All these challenges have consequences for price stability and interfere with monetary policy.

Paradoxically, this power and effectiveness of monetary policy, which is considered as coming from its high credibility, has come with a decade of apparent difficulties in fulfilling completely its mandate, with inflation significantly below target. Remarkably, however, with

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the exception of Japan, inflation expectations have remained relatively anchored. Such credibility is the main asset of central banks in the current context of renewed inflationary pressures, partly caused by exogenous factors, and uncertainties about how long these pressures might last. This is the main difference with the late 1970s, a period that is often used as a point of comparison to explain the current period.

The management of the post-Covid crisis recovery is one of the best illustrations of the complex and more demanding economic environment in which central banks must fulfil their mandate. This crisis has simultaneously created a negative shock on supply and demand in all the countries affected, with very contrasting impacts among sectors. With the recovery, the sign of the demand shock has reversed, with strong and different ripples among sectors on the supply side caused by the reorganisation of global value chains. Moreover, structural changes induced by the Covid crisis, such as remote working or the acceleration of digitalisation, could have positive consequences on the natural interest rate, counteracting its downward trend of the last ten years<sup>1</sup>. This type of double shock, exceptional in peacetime, creates new challenges for monetary policy. Unfortunately, it could happen again, for example if nothing is done about climate change.

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In the current context, our first challenge is the phasing out of exceptional measures. However, the issue of public debt will have to be addressed and, beyond the Covid crisis, central banks will have to take better account of the environmental and social dimensions.

### *HOW TO PHASE OUT OF EXCEPTIONAL PROGRAMMES?*

In a recovery surrounded by uncertainty, one thing is certain: gradually phasing out of the exceptional measures must be guided by a single compass, our inflation target: the ECB will adjust its monetary policy as pragmatically as necessary to achieve an inflation target of 2% over the medium term. Inflation is once again at the heart of an intense debate: in a few months it has gone from questioning the structural weakness of “missing inflation” – for more than a decade – to fears of the return of excessive and persistent inflation.

#### *From a lack of inflation to a return of inflation*

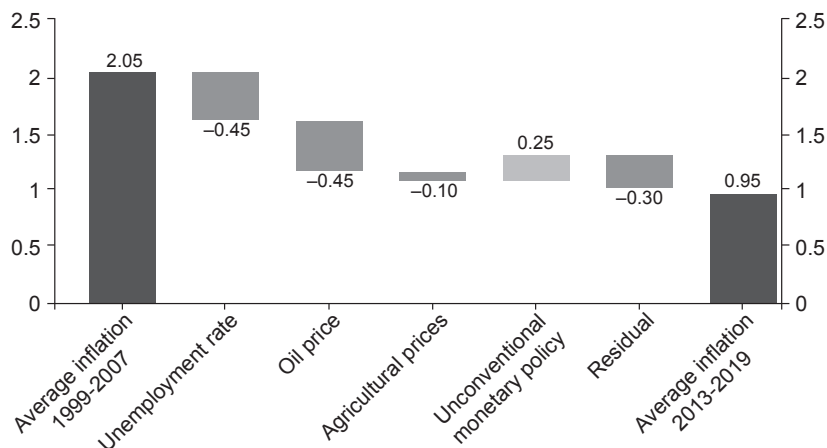
The Central Bank must first account for the trajectory over the past years. Until 2021, the “disappearance of inflation” – which was in fact a significant reduction – was a global phenomenon. Inflation in the euro area thus fell from an average of 2.1% over the 1999-2007 period to an average of 1.0% over the 2013-2019 period. In the US, inflation (as measured by the Personal Consumption Expenditure price index,



PCE index, which is the Fed's compass) fell by a similar 0.8 percentage points from 2.2% to 1.4% between the two periods.

According to an analysis by the Banque de France (Diev *et al.*, 2021), in the euro area, two factors explain most of the gap between the observed level of inflation and our target between 2013 and 2019: the weak business cycle and the fall in energy prices. The Great Recession and the sovereign debt crisis indeed had a lasting adverse effect on demand and employment between 2008 and 2012 and, consequently, on prices. In contrast to the years between 2002 and 2007, during which energy prices were the reason why central banks reached their 2% target, the sharp decline in oil prices after 2014 has lowered both the energy component of consumer prices directly and the production costs of non-energy goods and services indirectly. Monetary policy was able to limit these disinflationary impacts by implementing unconventional instruments once rates had reached their effective lower bound. Without this policy, average annual inflation would have been about 0.3 percentage points lower between 2014 and 2019. This leaves an unexplained part of the decrease in inflation, which amounts to around 0.3 percentage points on average, and which can be attributed to structural factors: globalisation, digitalisation, changes in wage bargaining, etc. (see Chart 1).

**Chart 1**  
**Breakdown of the Decline in Average Inflation**  
**in the Euro Area between 1999-2007 and 2013-2019**  
(HICP, year-on-year in %)



Note: values are rounded to the nearest 0.05.

Source: Banque de France (Bulletin No. 234/7).

Since the beginning of 2021, inflation in the euro area has risen significantly: from -0.3% in December 2020 to 5% in December 2021. The sharp rise in HICP inflation largely reflects the recovery in oil and gas prices from their low levels in 2020. It also reflects a gradual recovery in HICP inflation excluding energy and food, from 0.2% in December 2020 (exceptionally low given the temporary reduction in VAT in Germany) to 2.6% in December 2021. This rise in inflation is also related to sectoral bottlenecks, which do not stem from excessive demand overall, but from unevenly distributed demand, particularly among sectors, which is growing faster than supply. The price increases, which are mainly for commodities and some intermediate goods, are expected to fade as supply and inventories normalise in relation to demand. In other words, our central scenario is neither inflationary overheating nor stagflation.

After the inflation hump of 2021 which will last during of 2022, the euro area inflation rate would return to around 2% in 2023 and 2024. The sharp drop in unemployment over the entire forecast horizon and the gradual return of the economy to full production capacity utilisation would enable a return to growth rate in wages and prices excluding energy and food close to that of the 2002-2007 period, particularly for services. In France, the dynamics of inflation would return, over the same forecast horizon, to a rate close to 2% p.a., compared with approximately +0.7% p.a. over the 2013-2020 period<sup>2</sup>.

This is thus not a return to the pre-Covid *status quo*: the determinants of inflation dynamics would be closer to those of pre-2008 than to those of the 2013-2019 period. Between 2013 and 2019, the services component was particularly weak, with an average year-on-year change of 1.2%, twice as low as its average of 2.7% between 2002 and 2007. In 2023-2024, prices of private services would continue their upward trend thus supporting inflation excluding energy and food, as in 2002-2007. This increase, supported by the rise in wages driven by a historically low unemployment rate and taking into account recruitment difficulties, is built on long-term expectations anchored by the credibility of monetary policy. In this scenario, wage increases would be in line with labour productivity gains with medium-term inflation expectations anchored at 2%. In line with the historical patterns since the early 2000s, these wage increases would lead to fairly robust gains in household purchasing power, averaging around more than 1% over those two years, and at the same time, corporate profit margins would remain close to their pre-covid level.

### *Inflation and monetary policy*

The prospect of a return to a medium-term inflation rate consistent with the Eurosystem's inflation target guides our monetary policy. It builds on the conclusions of the Strategic Review of Monetary Policy published in July 2021, which clarify our 2% inflation target. The decisions published on 8<sup>th</sup> of July reinforced three interrelated characteristics. Our inflation target is now:

- simpler: the previous definition referred to a target “below but close to 2% (ECB, 2003)”. Like most other central banks (US, Japan, UK), the ECB is now targeting 2% inflation;
- symmetric: our target is a goal, not a ceiling. The Eurosystem can now accept a moderate and temporary inflation above 2%, without necessarily reacting through its monetary policy;
- over the Medium-term: we will continue to assess inflation outcomes over a sufficiently long period of time, beyond short-term changes in inflation.

The realisation in 2021 that the pandemic no longer had a significant downward impact on inflation - after a strong negative impact for almost a year - led to the announcement of the end of net purchases under the Pandemic Emergency Purchase Programme (PEPP) at the end of March 2022, as well as the end of the TLTRO-III interest rate subsidy scheme in June 2022. Furthermore, the strong short-term recovery and the expected inflation profile up to 2024 led the Eurosystem to decide to reduce the pace of the purchase programmes.

Uncertainties over medium-term activity and inflation remain however high, due to ongoing pandemic waves, bottlenecks, and the reorganisation of value chains. They therefore require the Governing Council to pay close attention to the actual data and to have strong “optionality” on the pace of the gradual normalisation of our monetary policy. Whatever the inflation scenario, the ECB will do what it takes to bring inflation back around its 2% target and to maintain the anchoring inflation expectations at that level on a lasting basis.

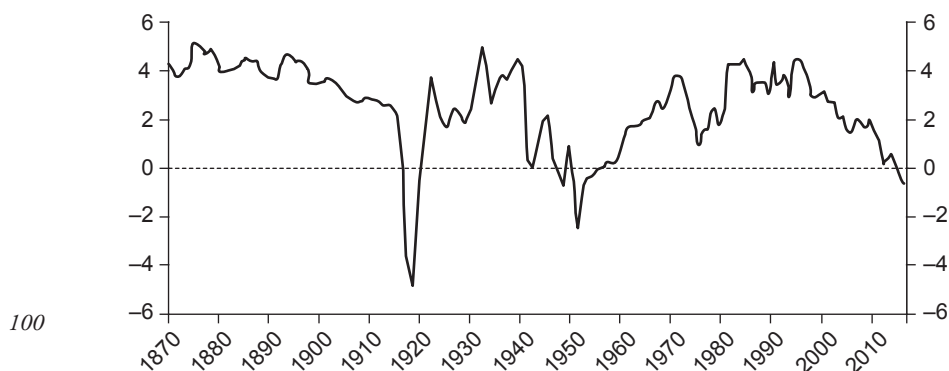
### *Unconventional monetary policy and lower natural rates*

The quartet of unconventional instruments<sup>3</sup> was put in place well before the Covid crisis to counter the existence of the Effective Lower Bound (ELB) on interest rates. This circumstance is all the more likely and therefore common when the natural interest rate is low. The natural interest rate is difficult to measure empirically but can be approximated by looking at changes in real rates.

In terms of its duration and magnitude, the decline in real interest rates over three decades is historic in peacetime. Chart 2 (below) shows the change in global long-term real interest rates between 1870 and

2016<sup>4</sup>. This chart shows that, apart from the lows following the two World Wars, the global real interest rate has fluctuated between 2% and 4% before declining steadily from 5% in the mid-1980s into negative territory in the 2010s. Today, real rates in the euro area or the United States, measured for example by OIS rates, are between -1.5% and -2% for a 10-year maturity or between -3% and -4% for a one-year maturity<sup>5</sup>, i.e. a historical low since the Second World War. The current level of real rates is therefore quite exceptional.

**Chart 2**  
**Global Long-Term Real Interest Rates (1870-2016)**  
[%]



Note: median real interest rates calculated by economists at the Bank for International Settlements (Borio *et al.*, 2017) using a broad set of advanced countries. Real rates were deflated using the CPI of each country.

Source: Borio *et al.* (2017).

Two types of factors explain the level of natural interest rates: those that affect the trend growth of economies, and those that influence the supply of savings and the demand for investment<sup>6</sup>.

In advanced countries, the ageing labour force and the slowdown in total factor productivity (TFP) have led to a slowdown in the trend growth rate of GDP (Holston *et al.*, 2017). The ageing of the population results in a reduced labour supply and has a negative impact on economic dynamism, innovation and productivity. Since the late 1970s, TFP in the euro area and Japan has lost on average 1 percentage point of growth per decade and since the mid-2000s it has stagnated at a level close to zero in most OECD countries (Bergeaud *et al.*, 2016).

The other cause of the decrease of the natural rate comes from an increased supply of savings and less demand for investment. The lower demand for investment in physical capital is mainly explained by the rise of the intangible economy (Haskel and Westlake, 2017). The global savings glut is fuelled both by various structural factors such as

ageing and rising inequality in advanced countries, as well as by factors linked to how capital markets work:

– for example, the accumulation of foreign exchange reserves in emerging countries for precautionary reasons after the Asian crisis in 1997 increased the demand for safe assets, as did the tighter prudential regulations in the financial sector that accelerated after the financial crisis of 2007-2008 (Gorton *et al.*, 2012). In addition, changes in the perception of risk surrounding the global growth outlook have also reduced the risk-free interest rate relative to the rate of return on capital (Marx *et al.*, 2021);

– the increase in life expectancy gives rise to a phenomenon amplified by ageing: the working-age population expects to ‘age for longer’ and therefore chooses to save a larger share of its income to finance its retirement over a longer horizon (Carvalho *et al.*, 2016). A rise in inequality also leads to a rise in the supply of savings, with high earners having a higher savings rate than low earners (Mian *et al.*, 2021).

The relative weight of each of these factors is discussed in a number of academic papers. Referring to a series of empirical work, Brand *et al.* (2018) find that productivity plays a secondary role in lowering natural interest rates. Research by Rachel and Smith (2017) suggests that factors related to the global savings glut explain three quarters of the decline in the natural rate. However, the analysis of Holston *et al.* (2017) indicates that the decline in natural interest rates in advanced countries is mainly the result of a slowdown in the trend growth rate of GDP, which in turn is the consequence of lower growth in labour supply and total factor productivity.

Over the medium term, the level of the natural interest rate could be influenced by two types of factors. On the one hand, according to Goodhart and Pradhan (2020), the ageing world population and deglobalisation trends could cause a change in the inflation regime compared to the 2010 decade (Goodhart and Pradhan, 2020). On the other hand, the structural changes brought about by the Covid crisis potentially bear the seeds of a surge in productivity, including through the increased digitalisation of economies. Combined with an expansion of labour supply and a more efficient use of resources, this surge in productivity could have a positive impact on the natural rate, suggesting a significant increase in the effectiveness of conventional monetary policy. Furthermore, the fight against climate change should lead to increased investment to meet the objectives set by the Paris Agreement, contributing to an increase in the natural rate.

An examination of the data will confirm when the different channels for increasing the natural rate will be activated in our economies. In the central scenario, the expected dynamics of prices excluding energy and

food at the forecast horizon of 2024 give hope for a medium-term normalisation of monetary policy. This would make it possible to limit the potentially distorting side effects created by non-conventional instruments, particularly on financial stability (see below). However, the uncertainties of this scenario, as the supply constraints, suggest that the whole toolbox should be retained for monetary policy to be highly flexible and responsive.

*MORE STRUCTURAL CHALLENGES: BEYOND PUBLIC DEBT,  
HOW CAN THE TWO ENVIRONMENTAL AND SOCIAL  
DIMENSIONS BE BETTER INTEGRATED?*

Europe, like the rest of the world, is facing three challenges: growing national debt, climate change and inequality. While these three challenges are each related to the Covid crisis, they pre-existed it and will not disappear with the end of the pandemic. None of them are directly related to the mandate given to central banks. But each makes the economic environment in which central banks operate more demanding for monetary policy. They are therefore an issue for central banks. Their direct impact, in the absence of any policy to counteract current trends, contributes to a lower natural rate of interest. Policies that address these three challenges, however, would have an upward impact on the natural rate, thereby increasing the effectiveness of conventional monetary policy instruments. Furthermore, by contributing to an increase in financial risks, climate change and debt are factors of increased financial instability. In this section, we discuss the potential role that central banks could play, within the scope of their mandate.

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*Growing national debt*

In France, as in the rest of the euro area, public debt ratios rose sharply with the extraordinary - and fully justified - fiscal measures taken to support activity during the Covid crisis<sup>7</sup>. All advanced countries experienced a shock of a similar magnitude, representing more than 10 percentage points of GDP on their public debt ratios, leading to historically high levels of debt for the last 50 years.

Unfortunately, a significant spontaneous reduction in France's public debt ratio cannot be expected in the current decade. With about 1.1% p.a. of potential GDP growth – a conservative assumption – and real public expenditure growth rate of circa 1.1%, which would be close to the trend over the last ten years, the level of public debt would remain well above its pre-Covid level over the next decade. This would be a risky strategy given the possibility of further economic or financial crises.

Against this backdrop, a credible debt reduction strategy must combine three levers, none of which taken separately is enough:

- firstly, we need time: to start reducing our debt ratio as soon as we emerge from the Covid crisis, and adopt a medium/long term strategy. Over 10 years, the debt ratio should fall well below 100%, which is its pre-Covid level;
- growth is a key factor in debt ratio reduction: it is necessary, but not sufficient, and can only be stimulated in the long term by structural reforms, which have been put off for too long;
- the third lever is better efficiency and control of our public spending, which is the highest in Europe and even in all developed countries.

This control of expenditure is necessary to reduce debt. Indeed, a growth in real expenditure reduced to +0.5% per annum (instead of +1.1%) would reduce the debt to about 100% of GDP, and France's nominal debt would start to decline in 2026. The target to be set is a matter for the democratic debate, not for central banks. But then compliance with it will be key. A set of expenditure rules would be consistent with the financing of public expenditure that increases long-term growth, including education, training, research, healthcare, and the energy transition. Consolidation of expenditure must also be supported by improvements in its economic and social efficiency.

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### *Central banks' commitment to fighting climate change*

The involvement of central banks in the climate cause may seem obvious today. But it was not a given five years ago, when the Network of Central Banks and Supervisors for the Greening of the Financial System (NGFS) was launched, and few issues have seen such quick and radical change in thinking and action. It is one of the innovations introduced by the Eurosystem's strategic monetary policy review. But to be credible and legitimate, this commitment must be consistent with our mandate.

Taking climate change into account is not overstepping our mission, nor is it simply a militant conviction or a passing fad. It is imperative: climate change is already driving financial risks, and affecting our ability to achieve price stability, the basis of our mandate. Climate change shocks, physical risks and transition risks can cause both upward pressure on prices and a slowdown in business activity<sup>8</sup>. As macroeconomic changes have a negative impact on productivity, they tend to slow down investments, thereby lowering the natural rate of interest (Kahn *et al.*, 2019).

Central banks cannot do everything; nothing will replace an appropriate carbon price and therefore a carbon tax<sup>9</sup>. But we can do a lot. By being responsible about our investment policy for instance.

That leaves the greening of monetary policy itself: it is our next step. The Eurosystem's accommodative monetary policy is already supporting climate change financing, thanks to low interest rates and abundant liquidity. The greening of the Central Bank's action is therefore not a case of further monetary policy easing but of recalibration of its tools. The strategic review is focusing on three priorities:

- we need to increase our understanding and modelling of the effects of climate change, not only on prices and financial stability but also on growth, and over much longer time spans than usual. A lot of progress has already been made, particularly in developing climate and economic scenarios. However, a great deal of methodological work remains to be done, namely to examine in greater depth the impact of the energy transition on economic and financial dynamics. From this standpoint, for the first time in 2021, the Banque de France and the ACPR, tested the resistance of French financial institutions to climate scenarios up to 2050 (ACPR, 2021);

- our climate ambition implies more transparency for all our counterparties, not only for financial but also for corporate counterparties, for collateral as well as for asset purchases programmes. The Eurosystem should require issuers to disclose their climate risk exposure according to a harmonised metric. The standardisation of data and the draft European Corporate Sustainability Reporting Directive (CSRD) are therefore a current priority;

- last but not least, through our monetary policy operations we will have to gradually decarbonise the Eurosystem's balance sheet and substantially reduce our climate risk. The Eurosystem will adjust the valuation of all its assets, whether they are held on the central bank's balance sheet (purchases) or taken as collateral (Villeroy de Galhau, 2021). An assessment of their decarbonisation commitments, which is dynamic over time and related to each sector, is a better incentive than the exclusion logic; it would avoid penalising all the emitters belonging to carbon-intensive sectors.

### *Central banking action on employment and inequality*

Rising inequality has become a major economic and social issue<sup>10</sup>. On the economic front, international institutions, such as the OECD and the IMF, have made it clear that excessive inequality reduces the long-term growth potential of economies. It is in this context that the BIS<sup>11</sup> and several other institutions are assessing the redistributive effects of monetary policy<sup>12</sup>.



While a rise in ‘primary’ inequality – before redistribution – has taken place in all developed countries since the 1980s, the welfare systems of many European countries have been able to reduce income inequality significantly (Dossche *et al.*, 2021). In France, for example, after taking into account redistribution, income inequality has remained stable. Over the long term, however, the health crisis could have negative consequences for the young and the lesser-qualified workforce. Education inequality, for instance, greatly increased during the pandemic: children from the most vulnerable backgrounds were those who experienced the highest negative impact on their learning achievements (Stantcheva, 2021).

Fiscal and tax policy should remain the main tool to fight inequality because it is, by nature, more targeted than monetary policy and has more political legitimacy with regard to redistribution challenges. This is particularly true in Europe, thanks to our social model. In view of the risk of widening inequalities in terms of education, both for young people and for low-skilled workers, apprenticeship and vocational training are an essential tool.

However, monetary policy can and should take these challenges into account within the scope of its mandate. Firstly, over the long term, price stability is a necessary condition for full employment. Secondly, thanks to its medium-term inflation target, the Eurosystem has some flexibility to avoid undesirable excessive fluctuations in employment and financial variables in the event of a shock.

On the effects, by pursuing its price stability mandate, the Central Bank contributes over time to reducing income inequality (Carstens, 2021). The fall in inflation since the 1980s has better preserved the purchasing power of the poorest. The question is regularly on the table with the accommodative monetary policy, conducted since the 2007 crisis. This policy has helped to reduce income inequality mainly through increased employment (Lenza and Slacalek, 2018). From 2013 to 2019, the euro area created more than eleven million jobs, three million of which come from the impact of monetary policy<sup>13</sup>. Moreover, in times of recession, such as during the Covid crisis, monetary policy has prevented many job losses. Conversely, lower returns on savings have affected the most privileged individuals. For the euro area as a whole, the significant effects of monetary policy on employment and labour income lead to an overall reduction in income inequality.<sup>14</sup>

As for assets, the effects are more complex to analyse. Undoubtedly, the decrease in interest rates is one of the factors behind the rise in property and share prices, which has increased inequality. However, this increase in house prices benefits all homeowners, who represent

more than half of the households in the euro area (Garbinti et Savignac, 2018).

The question of wealth inequalities is linked to another debate on the risks of overvaluation of financial and real estate assets: very accommodative monetary policies and abundant liquidity would encourage “bubbles” which could themselves generate future financial crises. The Eurosystem already assesses precisely financial cycles and vulnerabilities in markets or in financial institutions twice a year through the ECB’s *Financial Stability Review* (ECB, 2021) and the Banque de France’s French Financial System Risk Assessment (Banque de France, 2021). The ECB will now better integrate financial stability issues by replacing its traditional “monetary pillar with a monetary and financial analysis. This analysis may include indicators relating to corporate or household debt, or to share and property prices. This will promote the proportionality of our measures, a closer monitoring of the transmission mechanisms of monetary policy, and a better hedging of financial risks.

## NOTES

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1. The natural rate of interest was defined by Knut Wicksell (1898) as the rate of interest that keeps inflation stable while ensuring a level of demand that allows full employment.
2. See the macroeconomic projections published by the Banque de France (Andaloussi *et al.*, 2021).
3. This quartet of unconventional instruments includes: (1) negative interest rates; 2) forward guidance that clarifies the conditions for keeping interest rates low; (3) purchases of securities under the asset purchase programme (APP) in place since 2015; and (4) the provision of liquidity to banks (TLTRO) under the fixed rate – full allotment rule for them to finance the economy. Within the quartet of unconventional instruments, two instruments have a greater impact on present and future short-term rates: negative rates and forward guidance. Two instruments have more of an impact on the quantity of liquidity and on long-term rates: TLTROs and asset purchases. The combination of these instruments is particularly effective in maintaining favourable financing conditions, with a positive impact on growth, prices and employment.
4. See the work Borio *et al.* (2017).
5. These interest rates have been calculated from the nominal rates given by the OIS at a maturity of 1 or 10 years and have been deflated using the expected inflation rates as given by the ILS of the same maturity.
6. For a general discussion, see Garnier *et al.* (2019).
7. For more information, see Parts 1 and 3 Banque de France (2021b).
8. See, for example, Weber and Calza (2021) and Drudi *et al.* (2021).
9. See in particular Gollier and Reguant (2021).
10. For more information, see Part 3 of Banque de France (2021b).
11. See, for example, BIS (2021).
12. See, for example, Bonifacio *et al.* (2021).
13. The employment effect is deduced with elasticities from Hartmann and Smets (2018).
14. Ampudia *et al.* (2018) also find that indirect effects *via* employment and labour income are quantitatively larger than direct effects *via* asset prices, leading to an overall reduction in income inequality.

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# NEW MONETARY POLICY GUIDELINES: LOSING THE ANCHOR?

OTMAR ISSING\*

## *NEW DOCTRINES OF CENTRAL BANKING?*

**T**his article deals with new doctrines of central banking. Before entering into this discussion, it is useful, even necessary, to take a look at the historical experience (Issing and Wieland, 2013).

More than almost any other field of economics, the development of monetary theory and monetary policy over the course of time reflects the influence of and interaction between political and financial systems, academic discussion, and the views and actions of central banks. In the words of Wicksell (1906, p. 3-4): “[...] the choice of a measure of value, of a monetary system, of currency and credit legislation – all are in the hands of society [...]. Here, then, the rulers of society have an opportunity of showing their economic wisdom or folly. Monetary history reveals the fact that folly has frequently been paramount; for it describes many fateful mistakes.”

It is important to clarify in which environment and against what background the present discussion should be conducted. The experience of the past, both mistakes and successes, has to play a major role before dealing with the question of whether new doctrines or more modest “guidelines” should be considered.

## *THE HEYDAY OF THE REPUTATION OF CENTRAL BANKS*

Around the turn of the last century the reputation of central banks was at a peak (Issing, 2012). There was a widespread impression that

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inflation was under permanent control and the situation for growth and employment on a global level looked better than ever before. The “Great Moderation” indicates that this was a period in which inflation had come down from rather high levels and output variability had substantially declined. The discussion as to what extent this “Goldilocks economy” was merely the result of good luck – i.e. from the policy makers’ perspective due to exogenous factors – or the consequence of improved macro policies, especially monetary policy, continues to this day.

Stock and Watson (2003), for example, present empirical evidence for a decline in the size of exogenous shocks after the 1970s, whereas Romer and Romer (2002) see the trend towards greater stability primarily as a result of improvements in policy. Not surprisingly, central banks overall tend to prefer the latter explanation. And, although this debate is far from being resolved, there is reason to attribute the success to the changes in monetary policy.

After the outbreak of the financial crisis in 2007-2008 central banks acted promptly and – aided by fiscal policy – prevented the great recession from ending in a depression on the scale of the 1930s. They were seen as “saviours of the world” and their reputation reached a peak. The implicit high expectations of central banks’ capabilities were further reinforced when they were charged with micro and macroprudential supervision. Taken together, these developments could lead to overloading central banks and ultimately undermining their reputation and their independence (Issing, 2017a). When considering “new guidelines” it is necessary to review these developments.

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### *STRATEGIES REVISITED*

Monetary policy strategies also have to be scrutinised.

Starting in the mid-nineteen nineties in New Zealand, most central banks adopted inflation targeting and this strategy is still seen as state of the art. While monetary policy decisions were initially based on simple forecasts of inflation, the concept of inflation targeting has undergone a substantial change, culminating in “flexible inflation targeting”. After the financial crisis of 2007-2008, the leading expert in this field rendered a kind of final verdict: “In the end, my main conclusion so far from the crisis is that flexible inflation targeting, applied the right way and using all the information about financial factors that is relevant for the forecast of inflation and resource utilization at any horizon, remains the best-practice monetary policy before, during, and after the financial crisis.” (Svensson, 2009). This statement still represents mainstream thinking.

Yet this assessment gives no guidance on how all the information should be organised in order to make the right decision in the context of an undefined horizon. In the final analysis it protects the concept against any criticism and amounts to a tautology (Issing, 2012). It also implies (unintentional) criticism of the policy of the central banks that had adopted inflation targeting in the years before the crisis without respecting the information on how the currency and credit were evolving – a neglect that was a major contributing factor for financial imbalances and which ultimately brought about the collapse of the financial system.

In short: no model of inflation targeting currently exists that integrates the risks from the banking system and financial markets with all their dynamics, non-linearities and overall complexity. Central banks should agree that the search for an “optimal” monetary policy regime has not yet reached a satisfactory conclusion and that inflation targeting may entail risks and shortcomings.

A monetary policy strategy should include financial stability aspects. The financial crisis has shown that “price stability is not enough”. As Minsky explained, an environment of price stability can even foster destabilising risk-taking, which might ultimately lead financial markets to collapse. Is there a trade-off between price stability and financial stability? There will be cases of short-term conflict but over the medium to long-term, there can be no financial stability without price stability (Issing, 2003).

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In retrospect it is astonishing to see the extent to which advocates of the inflation targeting approach have underestimated the risk implied in inflation targeting by neglecting the development of monetary and financial factors.

“The ‘mop up after’ strategy received a severe real world stress test in 2000-2002, when the biggest bubble in history imploded, vaporizing some \$8 trillion in wealth in the process. It is noteworthy, but insufficiently noted, that the ensuing recession was tiny and that not a single sizable bank failed. In fact, and even more amazing, not a single sizable brokerage or investment bank failed either. Thus the fears that the ‘mop up after’ strategy might be overwhelmed by the speed and magnitude of the bursting of a giant bubble proved to be unfounded. Regarding Greenspan’s legacy, then, we pose a simple rhetorical question. If the mopping-up strategy worked this well after the mega-bubble burst in 2000, shouldn’t we assume that it will also work well after other, presumably smaller, bubbles burst in the future? Our suggested answer is apparent.”(Blinder and Reis, 2005, pp. 67-68).

As we know today, what followed was another bubble and the subsequent collapse on a much larger scale. Have not all the arguments in the above statement been discredited by this experience?

Yet despite the fact that the collapse of financial markets in 2007-2008 brought the world to the brink of disaster, many papers came to the conclusion that a monetary policy of “leaning against the wind” could not have prevented this development or could only have done so at very high costs. Would those costs have been higher than the costs of the financial mess that led not only to the great recession but had negative economic consequences lasting a decade?

Most central banks seem to follow a strategy of reacting quickly and decisively in the case of an economic downturn, but only reluctantly and very moderately when the recovery is gaining steam. This asymmetry implied in the risk management approach to monetary policy was already suggested by Greenspan (2005) (for a criticism, see Buiter, 2008). In the course of time such an approach could be not only inflationary, but also foster the emergence of financial imbalances.

Regardless of whether they have an explicit mandate for financial stability or not, central banks risk their reputation if they are perceived to have underestimated the risk of financial instability. How should they respond to this challenge?

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Can monetary policy contribute to preserving financial stability? As explained above, inflation targeting is incapable of meeting this challenge.

According to one approach, macroprudential policy should be the main tool for preserving financial stability, and financial stability should become an “explicit objective of monetary policy to be used when macroprudential policies fail as an instrument of last resort” (Smets, 2013, pp. 151-152).

However, this approach could blur the ranking of the objectives of the central bank. And relying on macroprudential policy in the first place, notwithstanding all the critical arguments against excessive expectations of this instrument, might bring monetary policy into an untenable position. If and when macroprudential policy fails in a boom phase, it might be too late for an appropriate response using monetary policy. The challenge might be close to “pricking the bubble”, which would cause turmoil in financial markets, bring major economic costs, and have a negative impact on the reputation of the central bank (Issing, 2017b).

The “monetary pillar” of the ECB’s strategy was an approach that aimed to implicitly take financial stability aspects into account when making monetary policy decisions. The strategy review has extended



this approach. “[...] the monetary and financial analysis examines monetary and financial indicators, with a focus on the operation of the monetary transmission mechanism and the possible risk to medium-term price stability from financial imbalances and monetary factors.” (ECB, 2021). Considering financial imbalances and connected monetary developments will allow the central bank to discriminate between benign and less benign phenomena in financial markets (Fahr *et al.*, 2011). It will be interesting to observe how well the ECB succeeds in integrating this assessment into a comprehensive model (Issing, 2021).

It is striking that, despite severe deficiencies in the inflation targeting strategy, no other major central bank is even considering taking monetary developments and connected financial stability issues into account.

In this context, two further aspects should be mentioned. One is the expansion of the monetary policy toolkit. After the financial crisis, a number of “unorthodox instruments” were employed. Quantitative easing (QE) has become the key instrument. It is not easy to draw a line between “orthodox” open market policy and “unorthodox” QE. The main difference is the huge size of central bank intervention in financial markets and the public debt/deficit position, which blurs the distinction between monetary and fiscal policy. Managing the exit from the crisis mode that began with the financial crisis and continued with monetary policy in response to the Covid-19 pandemic is a huge challenge.

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The ECB has to clarify that responsibility for defending the present composition of the euro area must be in the hands of governments and “whatever it takes” must not be perceived as a bail-out commitment.

The other instrument to be reviewed is forward guidance. In their communication, in which forward guidance plays a central role, central banks have gone very far in making commitments – which markets perceive more or less as unconditional – for a rather long period of time. In periods of high uncertainty, this may lead to dangerous conflicts with the objective of taking monetary policy decisions in a timely and appropriate manner (Issing, 2019).

### *MULTIDIMENSIONAL MANDATE?*

It is the central role of a central bank to keep the currency stable. Accordingly, all central banks have a mandate to maintain price stability. (The Fed – Federal Reserve – has a dual mandate including maximum employment – the commitment to low long-term interest rates is hardly mentioned).

A clear and limited mandate is the basis for making the central bank independent. There is no democratic justification for an independent central bank to infringe on its mandate.

In the course of recent years central banks have been endowed with new areas of competence and have made their own commitments to influence income and wealth distribution and/or contribute to the fight against climate change. A number of questions arise from this self-imposed extension of their responsibilities. Can monetary policy achieve these additional goals? What about the Tinbergen rule – what are the instruments? What about conflicts with the mandate to maintain price stability?

Creating expectations and then failing to deliver on commitments will harm the reputation of the central bank and undermine its status of independence (Issing, forthcoming).

### *NEW GUIDELINES?*

Controlling or, more modestly, guiding inflation expectations has become the key goal of monetary policy (Woodford, 2003). To meet this challenge, inflation expectations must be firmly anchored to the inflation target of the central bank. When there is a high degree of uncertainty about future economic and political developments, having a steady anchor becomes all the more important, but at the same time more difficult to establish.

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As stated at the beginning, monetary theory and policy reflect developments in the economy and society. To recall Wicksell's warning, in order to avoid repeating old mistakes and making new ones, a number of guidelines can be drawn.

It remains to be seen whether the Fed's concept of average inflation targeting or the new "symmetry" approach of the ECB will be successful in providing a steady anchor.

Forward guidance, which was once called a "revolution" (Yellen, 2012), has become the main communications strategy for anchoring expectations. Theory and practice have, however, revealed major problems with this approach (Issing, 2019). It is striking that, in an environment of high uncertainty – uncertainty in the sense of Frank Knight – the Fed and the ECB have announced they will keep central bank interest rates fixed at their present low levels for quite a long period of time. Central banks, themselves facing high uncertainty, try to reduce or even eradicate uncertainty in the private domain by tying their own hands. This may cause major problems related to time inconsistency for their monetary policy. New guidelines should be drawn that thoroughly review the theory and practice of forward

guidance. This is even more necessary given that multiple goals make predicting the evolution of central bank interest rates an almost impossible task.

The theoretical underpinning of monetary policy also needs a fundamental review. Models have become more and more complex – and at the same time doubts have increased over whether they can reflect the deep changes in the structure of the economy and of financial markets. “Old” concepts like credibility issues, time inconsistency, even a straightforward aspect such as long and variable time lags have more or less disappeared from the agenda. Can inflation targeting really be seen as the final optimal monetary policy regime? Will neglecting the currency and credit become a permanent orientation?

We are still far away from fully understanding financial stability and the role for central banks. On the one hand, further research should be given priority. On the other hand, how should central banks act in an environment of extreme uncertainty? Being too ambitious might be dangerous, but what would a strategy of avoiding major mistakes look like?

The challenges for central banking have two dimensions. There is the more technical side: how should one conduct monetary policy based on research and on practical experience? On the institutional level: Independence and a clear mandate are the main pillars of existing institutional arrangements. Independence is seen as the indispensable prerequisite for sustainable price stability. Yet, in the meantime, central banks have been made responsible for wealth distribution and climate change or have themselves taken initiatives in this direction. Can central bank independence survive, should it even survive, under a new regime of this nature?

The role of central banks in society has to be reconsidered. Central bankers should not ignore the implied threat to their independence that getting involved in political issues raises.

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# READING CENTRAL BANKS DOES UNCONVENTIONAL BLUR THE PICTURE?

DIRK SCHUMACHER\*

**I**t is in the interest of central banks that financial market participants and the general public have a good understanding of their intentions and “reaction function”, i.e. how central banks react to change in the macro-economic environment and the economic outlook.

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While this seems now a general accepted view, it was not always seen as a good thing in the history of central banking for the public to have a clear understanding of what the central bank was up to. The Bank of England, for example, kept communication with the public to a bare minimum for most of its history. Between 1920 and 1945, the Governor of the Bank of England gave only one speech per year (Haldane, 2017).<sup>1</sup> Things have clearly changed since then, with barely a day passing by without a public intervention from one of the major central banks. Modern central banks see communication with the public and the signaling of their intentions as part of their daily life.

There are good reasons why a central bank would want the public to understand its motives and actions. On a very general level, a central bank needs to anchor medium-term private sector inflation expectations to its inflation target in order to be able to fulfill its price stability mandate. A dis-anchoring of private sector inflation expectations – given the self-fulfilling element of inflation dynamics – poses a serious

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problem for a central bank. Thus, ensuring that the private sector has “faith” in the central bank and its actions to achieve its inflation target is a necessary pre-condition for success.<sup>2</sup>

But the advantages of understanding the central bank’s intentions go beyond stabilizing medium-term inflation expectations. By understanding the central bank’s response to macro-economic changes, financial markets boost the central bank’s ability to steer the economy and inflation after an exogenous shock has pushed the economy away from its equilibrium path. This also means that a misreading of a central bank’s reaction function and its intentions complicates the central bank’s job.<sup>3</sup>

### *THE TRANSMISSION OF MONETARY POLICY TO THE ECONOMY*

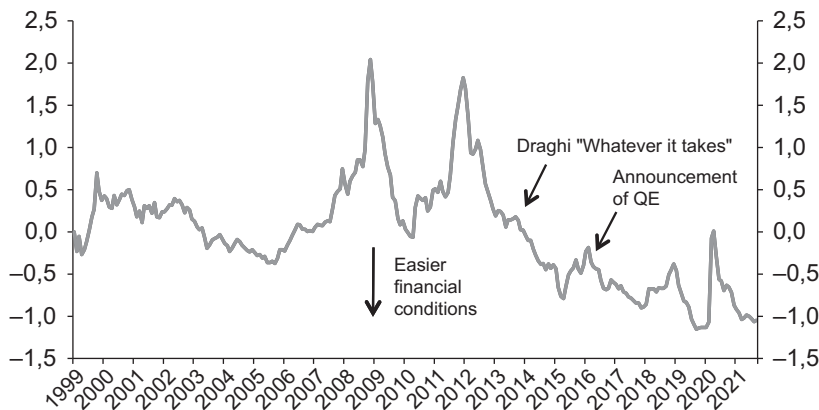
Financial markets are instrumental for conducting monetary policy and transmitting the initial monetary impulse to the broader economy. There are many steps involved in the transmission of monetary policy to the real economy and many different financial markets (bond markets, FX markets, stock markets) are influenced by monetary policy decisions. Those markets in turn determine how any change in monetary policy is passed on to households and companies.

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There is now a good deal of literature on how best to take into account these different transmission channels and accordingly, how to summarize the monetary policy stance.<sup>4</sup> Following the work of Koop and Korobilis (2014), we have developed a financial conditions index that allows for a time-variation in the effect of specific financial variables on the economy (see Chart 1 below)(Koop and Korobilis, 2014). It is, for example, likely that changes in the level of the interest rate have different effects on the economy during the business cycle. It is conceivable that the interest rate sensitivity of corporate investment spending declines during recessions as the corporate sector deleverages and cuts back on investment spending. Being aware of the variability of transmission channels – and communicating this to the public – is part of the communication strategy of central banks.

Financial conditions, as measured through the lens of our index, have seen massive swings since the run-up to the financial crisis in 2008-2009. Two questions arise from the perspective of market participants in this context. First, what level of financial conditions is the ECB aiming for when setting its policy instruments? Second, how will the ECB affect market prices in order to prod financial conditions to the desired level? As we will argue in the remainder of this paper, as the ECB has added new instruments to its monetary toolbox, answering both these questions has become more difficult.

**Chart 1**  
**Euro Area: Natixis Financial Conditions Index**  
 [%]

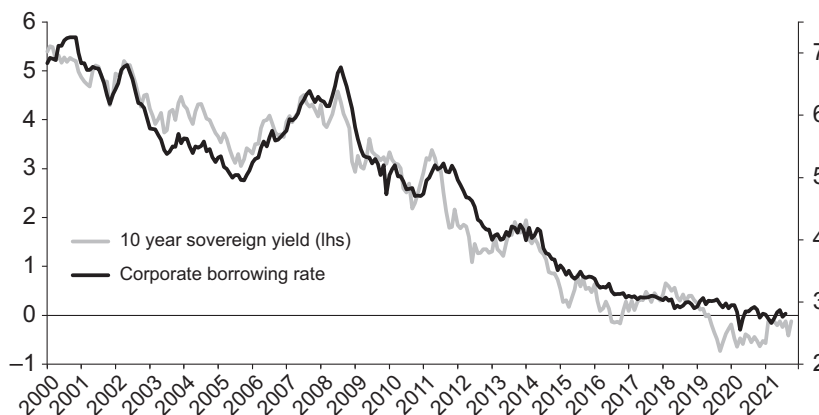


Source: Natixis.

Beyond the financial conditions determined in financial markets, bank lending rates, which are usually not included in Financial Conditions Indexes, are another crucial part of the transmission of central bank policy changes. As Chart 2 shows, these rates are closely linked – sometimes more, sometimes less – to sovereign yields (in this case for Germany) and therefore also influenced by the central bank’s policy stance.

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**Chart 2**  
**Germany: 10 Year Sovereign Yield and Bank Lending Rate for Non-Financial Corporates**  
 [%]



Sources: Datastream; Natixis.

To sum up, the effectiveness of central banks in reaching their objectives necessarily depends on financial markets responding in the intended way. This in turn depends on financial market participants understanding what the intention of the central bank is. As we will show, this is usually not too difficult in “normal times”.

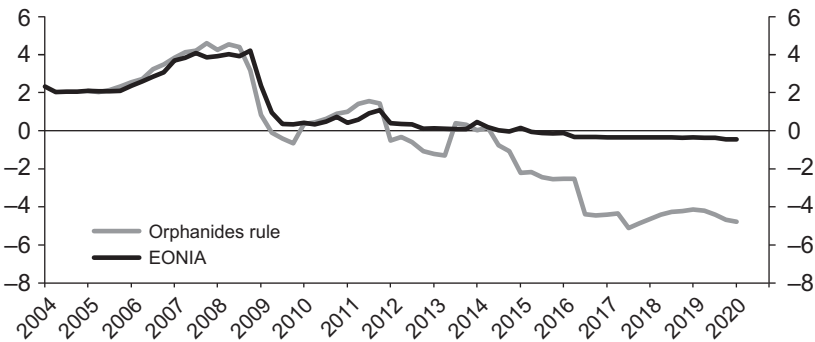
*READING CENTRAL BANKS IN “NORMAL” TIMES*

The ECB’s Main Refinancing Rate – the interest rate at which commercial banks can borrow money – reflects the ECB policy stance during “normal times”. The level of the Refi rate determines the overnight interest rates, which is the first step in the transmission of the ECB’s policy stance to the wider economy. The ECB sets its policy rate to ensure that, over the medium term, inflation stays at the ECB’s inflation target. The setting of the ECB’s policy rate can be calculated more or less with rather simple “policy rules”.

One such rule is named after the former ECB Governing Council member Athanasios Orphanides (Orphanides and Williams, 2003). The rule says that the central bank should change its policy rate in response to deviations of the projected inflation rate from the target rate and the GDP growth rate from the trend growth rate. Despite its simplicity, this rule had a good track record in closely following the ECB’s actual policy stance, as reflected in the EONIA rate (a short-term money market rate) until 2015 (see Chart 3). From 2015 onwards, however, the policy rate, as determined by the Orphanides rule, has steadily declined, reflecting inflation lower than the ECB’s target. According to the rule, the ECB should have lowered its policy rate – given the inflation and growth outlook – to around -6% by 2017.

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**Chart 3**  
**Policy Rate According to Orphanides Rule**  
[%]



Source: Natixis.



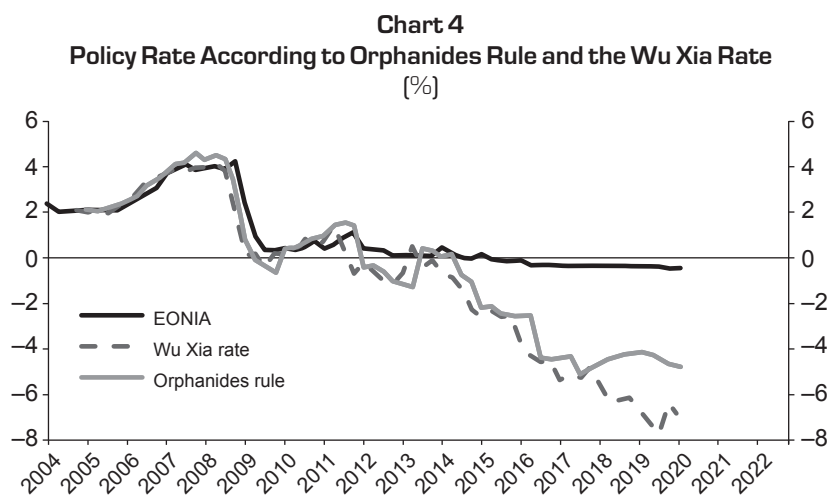
While the ECB was (and still is) not in a position to push interest rates much further into negative territory, it did not sit still once it had reached the effective lower bound for its policy rates. To accompany its record low policy rates, in early 2015 the ECB started quantitative easing (QE) on a large scale, that is, outright purchases of financial assets, such as government bonds.<sup>5</sup>

There are many channels through which QE works. But what matters for the purpose of this article is that comprehending the stance of monetary policy becomes more difficult as additional instruments are added to the central bank's toolbox.

This is not to say that it is impossible to translate the various instruments a central bank uses to support growth (and thereby lift inflation) into a single metric. A well-known attempt to do this is the so-called Wu-Xia shadow rate. The idea behind this approach is to calculate the impact of QE on interest rates along the yield curve and then translate this impact into equivalent changes in the policy rate. Put differently, the Wu-Xia shadow rate shows by how much the policy rate would need to have declined in order to achieve the same effect on interest rates at longer maturities that the central bank's asset purchases did (Wu and Xia, 2016).

Chart 4 shows the Wu-Xia shadow rate together with the rate implied by the Orphanides rule. While the fit between both variables is far from perfect, the chart nevertheless shows that the shadow rate – that is, when translating the effect of QE into a short-term interest rate – also moved deep into negative territory.

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Source: Natixis.

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*THINGS GET MORE COMPLICATED  
WHEN POLICY INSTRUMENTS ARE ADDED*

Analytical tools, such as the Wu-Xia shadow rate, make it possible to better understand the ECB's policy actions once QE is added. But such tools are necessarily incomplete and there are many important questions that are relevant when interpreting the ECB's intentions and effectiveness in guiding financial markets, which are not adequately captured by any shadow rate.

One crucial question, for example, is whether it is the *flow* or *stock* of ECB purchases that is the relevant variable in order to understand the effect of QE on interest rates. Put differently, is it the steady flow of purchases that are pushing interest rates down or is it the stock (the cumulated flows) sitting on the ECB's balance sheet that exerts the dampening effect? The answer to this question has starkly different implications for the ECB. If it is the flow of purchases that is the relevant variable, we should expect interest rates to start rising again quickly once QE has ended. However, if it is the stock of past purchases that is more relevant, we should expect the effect of QE to remain visible until the ECB starts selling or stops reinvesting its past purchases. The path for monetary policy is quite different, depending on which of the two explanations is correct. Again, this also shows that these purchases are adding another layer of complexity.

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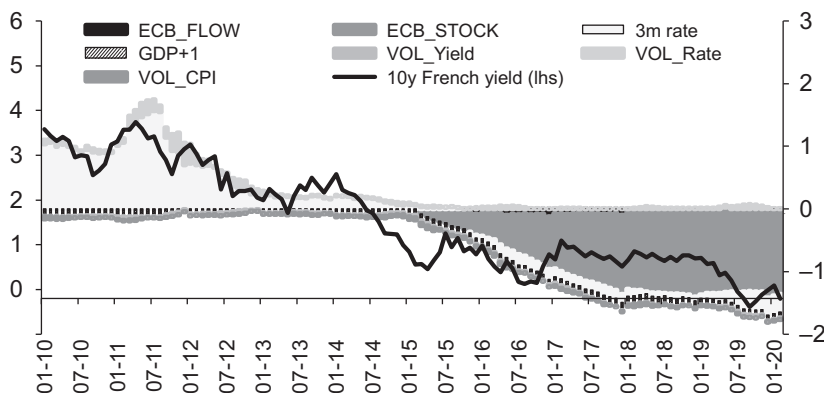
There is some evidence that the stock effect of ECB purchases is significantly more relevant in explaining the behaviour of government bond yields than the flow of purchases. We can use a simple regression model to explain the movements of sovereign yields depending on a range of macro variables and ECB flow and stock of purchases.<sup>6</sup> Chart 5 (below) shows the decomposition of the interest rate of the French 10-year government bond in different macro variables and the flow of ECB purchases and the stock of purchases.

Until the start of QE in early 2015, short-term interest rates (which are more or less directly influenced by the ECB) were the main driver of French 10-year rates. Since 2015, however, the stock of ECB purchases has played an increasingly important role. At the same time, the flow of purchases, at least according to our model, has only marginally contributed to the movement in French 10-year rates.

Taken at face value, all this would mean that it is still possible to assess the ECB's policy stance and its impact on the economy. But it is also clear that our model only gives an indication of what drives

French sovereign yields. Other factors, not captured in the model, are certainly at play.<sup>7</sup> Thus, the complexity of “reading” the ECB and understanding the implications of any change concerning its different instruments has learily increased.

**Chart 5**  
**Decomposition of French 10-Year Yield**  
 [%]



Sources: Datastream; ECB; Natixis.

Further complexity has been added by the use of various long-term refinancing operations that the ECB has made available to banks. Under these operations, commercial banks, which are eligible counterparties for the ECB, have been able to borrow money from the ECB under favourable conditions for a number of years. The intention behind these operations has been to secure funding for banks and to induce them to expand (or at least not shrink) their lending to the private sector.

Again, there is not necessarily a definitive answer to the question of how effective these long-term operations have been, although it is safe to say that they have provided an important safety net to banks. But what these long-term operations have also done was to make it even more difficult to quantify the ECB’s policy stance. To be sure, the refinancing conditions of the long-term refinancing operations have been linked to the policy rate prevailing during the lifetime of the funding operations. Nevertheless, funding conditions would, and do, remain more favorable for banks under all circumstances compared to a situation without these operations (i.e. if banks needed to refinance in the wholesale funding markets). This in turn means that the transmission of any change in the policy rate will to some extent be “diluted”.

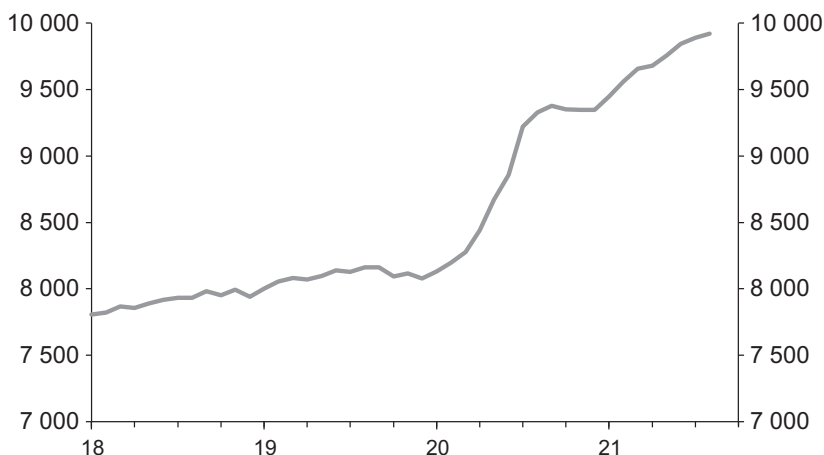
To conclude: the many dimensions along which monetary policy now operates have made it more complicated to understand (1) how changes of each instrument will impact financial markets and the economy and (2) how the ECB will respond to any change in financial conditions.

*THE INTERPLAY BETWEEN FISCAL AND MONETARY  
POLICY COMPLICATES THE PICTURE FURTHER*

With interest rates close to record lows across the maturity spectrum and the ECB unable to push interest rates down much further, it has been widely (though not universally) accepted that fiscal policy had to, and will in the future, play a bigger role in stabilizing the economy.<sup>8</sup> But for fiscal policy to be able to play that role, the ECB has had to create the fiscal space for governments to operate in. This new interplay between monetary and fiscal policy has been at full display during the pandemic. As wide parts of the economy were shut down, governments had to step in and make significant transfers to the private sector and provide financial safety nets for banks and the corporate sector. To absorb the surge in new issuance of government bonds the ECB had to step up its purchases significantly (see Chart 6).

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**Chart 6**  
**Euro Area: Government Debt Securities Outstanding**  
(bn EUR)



Sources: Datastream; Natixis.

While most observers would agree that there was no realistic alternative for the ECB but to act in this extraordinary situation, that will not make conducting monetary policy any easier going forward.

For one, the massive additional amount of public debt sitting on the ECB's balance sheet may imply that the ECB will have to more explicitly take into account how its policy actions may affect the funding situation of governments. In particular for governments with high debt ratios, any change in the holding of government debt by the ECB may trigger an extreme market reaction. This is not to say that the ECB cannot pursue a tighter monetary policy course if this is deemed necessary to achieve its inflation target. But choosing the adequate path for monetary policy has clearly become more difficult with these additional constraints.

Another point to consider is the potential threat to the ECB's independence that could come from providing fiscal space for governments. Even if it is assumed that the ECB and its Governing Council will not waiver in their commitment to price stability, it is easy to see how under some circumstances the political pressure to act differently could mount quickly. In such a situation, the ECB might see itself forced to demonstrate its independence by pursuing an overly aggressive path.

So far, all this is speculation and time will tell how the new interplay between fiscal and monetary policy will influence how monetary policy is conducted. But one thing is sure: market participants will have to make up their minds if and to what extent future ECB policy actions will be influenced by this new implicit arrangement. All else equal, that has further increased the likelihood of misreading the ECB.

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## NOTES

1. Another telling example is cited in Issing (2019). In 1931, Deputy Governour Harvey defended the unwillingness of the Bank of England to give any reasons in public for its actions by arguing that “*to defend ourselves is somewhat akin to a lady starting to defend her virtue*”.
2. For a thorough exposition of these arguments see Woodford (2003).
3. Michael Woodford has summarized this view as “*successful monetary policy is not so much a matter of effective control of overnight interest rates ... as of affecting ... the evolution of market expectations...*”. See Woodford (2001).
4. See, for example, Hatzius *et al* (2010).
5. The ECB had been buying smaller amounts of corporate bonds and covered bonds prior to that.
6. We built a so-called SURE model that links the movements of the sovereign yields of the EMU4 countries together. Growth expectations one year out and several measures of market volatility are used as input in the model. Finally, we add the flow and the stock of ECB purchases as additional variables.
7. See also Eser *et al* (2019).
8. See also ECB (2021).

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TOO CLOSE TO JUSTIFY?  
FISCALIZATION  
OF MONETARY POLICY





# LIMITING THE FISCALISATION OF CENTRAL BANKS

STEPHEN G. CECCHETTI\*  
KERMIT L. SCHOENHOLTZ\*\*

Since 2007, and especially during the Covid pandemic, central banks have expanded both the scope and scale of their interventions in unprecedented fashion, blurring the lines between monetary and fiscal policy. This *fiscalisation* endangers central bank independence, thereby weakening monetary policymakers' ability to deliver on their mandates for price and financial stability. To find a way back to the pre-2008 division of responsibilities, governments must establish clearer limits on what central banks can and cannot do.

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Recalling the world before the 2007-2009 financial crisis may seem quaint, but it provides a useful benchmark against which to measure how far the role of the central bank has evolved over the past dozen years. We start from the commonly agreed premise that, to meet its price stability (and employment) objectives, the central bank seeks to influence financial conditions. An easing or tightening of these conditions brings higher or lower growth and employment, influencing both inflation and inflation expectations.

In a conventional pre-crisis framework, policymakers' lever for control is the supply of the central bank's own liabilities. These com-

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This essay is based in part on Cecchetti and Schoenholtz (2021a). The authors thank Paul Tucker for helping them improve their understanding of the role and structure of central banking.

mercial bank reserves are the safest and most liquid assets in the financial system with the shortest maturities, so their scarcity determines the banks' opportunity cost for holding other liquid assets. That opportunity cost indirectly influences the value of all other financial instruments. By focusing on this one policy instrument, the central bank lets financial markets determine the price of maturity, liquidity, and credit risk.

This conventional policy approach relies on well-functioning markets so that arbitrage can operate. For example, long-term nominal government interest rates reflect market perceptions of expected future short-term real interest rates, future inflation, and risks concerning both. Pricing of private debt uses the equivalent-maturity government bond yield as a benchmark, adding a credit-risk premium that reflects investors' views of default and recovery rates. Corporate equities and real estate add further risk premia to the calculations. Absent financial frictions, when monetary policymakers adjust the target interest rate on their reserve liabilities, the change ripples through the system influencing financial conditions, growth, and inflation.

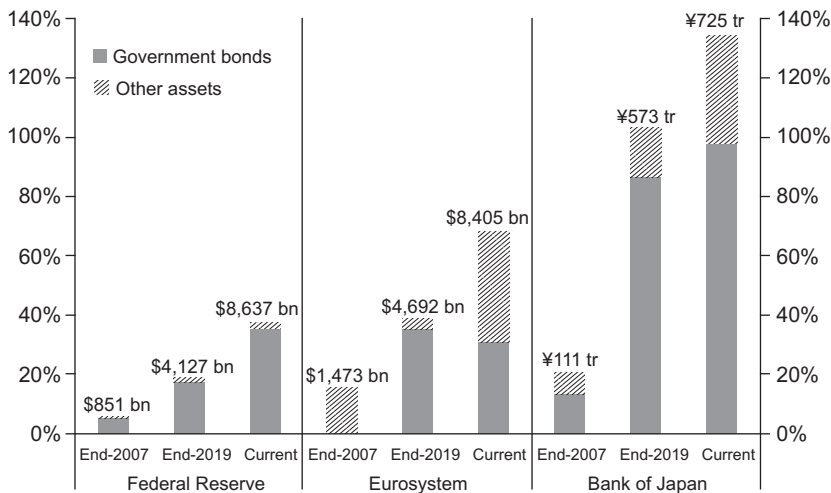
Starting in 2007, the world changed dramatically. First, frictions clogged the transmission mechanism from safe to risky assets as banks lost faith in their counterparties. Frozen interbank markets more broadly undermined the link between the central bank's policy tool and financial conditions, reducing its ability to meet its objectives. Even lowering (close) to zero the opportunity cost of holding central bank reserves left financial conditions too restrictive to steady prices and restore normal use of resources in a reasonable time frame. How could policymakers further ease financial conditions when their conventional tool was no longer available?

Major central banks responded by intervening directly in a wider array of asset markets. They began large-scale purchases of both long-term sovereigns and quasi-public fixed-income securities. (Following the lead of emerging market central banks – like the Hong Kong Monetary Authority in August 1998 – some jurisdictions went so far as to acquire equities and real estate-linked securities). And, where private intermediation became dysfunctional, policymakers substituted the central bank balance sheet (at least temporarily) for that of private financial intermediaries and markets.<sup>1</sup> Serving as market makers of last resort, policymakers remained able to influence financial conditions in order to stabilize prices and activity.

Reflecting the recent stages of central bank expansion, in Chart 1 (below) we trace the rise of central bank assets (as a percent of GDP) from 2007 to 2021 for the Federal Reserve (Fed), the Eurosystem, and the Bank of Japan. Looking at the progression over time, we

observe the dramatic increase in the overall size of balance sheets. For the Fed, current assets are 30 percentage points of GDP (\$8 trillion) above their level at the end of 2007. Since the Fed can directly purchase only fully federally guaranteed securities, this increase has been almost entirely in the form of government bonds and mortgage-backed securities issued by federal agencies and government-sponsored enterprises. Looking at the Eurosystem's balance sheet, the expansion is similar in absolute size, having increased by €7 trillion (which is nearly \$7.9 trillion at current exchange rates). Importantly, holdings of government bonds have gone from virtually zero to nearly €4 trillion (or about 31% of euro area GDP). The Bank of Japan is an outlier: in many ways Japanese central bankers were laying the path others would follow during the pandemic that began in March 2020.<sup>2</sup>

**Chart 1**  
**Central Bank Assets (end of year), 2007, 2009 and 2021**



Notes: values for the Fed are for all federal government guaranteed securities, including mortgage-backed securities issued by federal agencies and GSEs. The 2021 observations are as of October.

Sources: Fed; Eurostat; Bank of Japan; FRED.

How should we think about these massive changes in the size of central bank balance sheets? Our answer is that they represent a dramatic shift in what central banks are doing and pose a considerable risk to their independence.

In the following section, we provide a brief description of the ways in which central banks employ their balance sheets. Then, we turn to a discussion of how central bank balance sheet actions since 2007 shifted from one objective to another. For example, market-making operations have at times been transformed into more traditional aggre-

gate demand stimulus. These shifts both mask policy risks and blur the lines between monetary and fiscal policy, a pattern that we label *fiscalisation*.

We distinguish between fiscalisation – where central banks take on roles more appropriately assigned to fiscal authorities – and fiscal dominance, where a government sets the volume of central bank issuance to finance its deficit. While fiscalisation is less extreme than fiscal dominance, it nonetheless threatens central bank independence. Regardless of whether central bankers act because they are the only ones with the tools or because of direct political pressure, fiscalisation involves unelected technocrats setting policies that are primarily distributional in nature.

We conclude with proposals for limiting fiscalisation. Anticipating our conclusion, authorities can do two things: commit to structural distinctions between fiscal and monetary policy; and articulate a *balance sheet reaction function* (analogous to a policy interest rate reaction function) that includes the reversal of crisis interventions when market functionality is restored. Having engaged in fiscalisation more than once, either by choice or by circumstance, central banks need to establish a framework that prevents further repetition.

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### *HOW CENTRAL BANKS USE THEIR BALANCE SHEETS*

There are various ways in which central banks can and have used their balance sheets. Cecchetti and Tucker (2021) propose five broad areas:

- *monetary policy*: stimulating or dampening aggregate demand to achieve price stability while fully using the economy's productive resources;
- *lender of last resort*: lending funds to fundamentally solvent firms or entities facing liquidity needs that cannot be met via private markets;
- *market maker of last resort*: addressing liquidity problems in specific markets;
- *selective credit support*: steering the flow of credit to specific sectors, regions, or firms;
- *emergency government financing*: providing needed funds directly to governments.

We briefly consider each of these. The first is what most people associate with the term *monetary policy*. That is, to achieve their price stability (and possibly employment) objectives, monetary policymakers use their balance sheets to set the quantity or price of central bank money. In recent years, with policy rates stuck at their effective lower bound (zero or slightly below zero), the primary instrument of stabi-

lization policy has shifted from prices (overnight interest rates) to the quantities of central bank liabilities held by banks. Whether quantitative easing (QE) in this form works as intended is debatable.<sup>3</sup>

To put a stop to bank runs and avoid system-wide panics, the central bank traditionally acts as the *lender of last resort* (LoLR).<sup>4</sup> This means standing ready to lend funds to sound firms that are temporarily illiquid. Beyond solvency, a key question is what categories of financial intermediaries should have access to the central bank. When commercial banks were the dominant players in the financial system, LoLR facilities were designed for them alone. Today, there is a set of intermediaries (including broker-dealers, money market funds and others) that engage in bank-like activities offering demandable liabilities backed by less than completely liquid assets. While these entities usually lack direct access to the central bank, post-2007 experience indicates that in many cases they receive help when they come under stress.<sup>5</sup> Indeed, in the future, new financial instruments such as stablecoins may elicit analogous LoLR interventions.

The intention of the *market maker of last resort* (MMLR) is to catalyze activity, restoring liquidity in a market that is critical to the real economy. While central banks began acting as LoLR nearly 200 years ago, MMLR operations are (for the most part) less than 20 years old. In practice, an MMLR purchases securities, so its actions may resemble QE, especially when the intention is to restore the function of sovereign bond markets. It is, however, important to distinguish an MMLR purchase from QE. First, MMLR operations can occur at any level of the policy rate. Second, the restoration of normal market function can allow MMLR holdings to be quickly unwound.<sup>6</sup>

Next is *selective credit support*, where policymakers subsidize the provision of funds to favored users. While it is difficult to envision apolitical justifications for such actions, central banks engage in them, nevertheless. Indeed, politicians are tempted to use central banks – which have the tools and the resources – to micro-manage the allocation of credit. To limit that temptation and ensure public accountability, an effective central bank policy framework requires that central banks disclose what they are doing and provide a clear rationale.<sup>7</sup>

Finally, central banks can use their balance sheets to provide *emergency financing to governments*. There is a sense in which this brings us back to one of the origins of central banking – financing wars. In many jurisdictions there are legal restrictions designed to counter the temptation of fiscal authorities to use central bank financing. But it would be unwise to preclude this in absolutely all circumstances. And when existential threats to national security arise, such restrictions would be virtually impossible to enforce.

*BLURRED LINES*

The key risk that arises from the expanded role of central banks is the blurring of the lines that previously distinguished various balance sheet actions. Within this class of problems, the largest ones reflect the overlap of operations to implement QE, MMLR and emergency government financing.

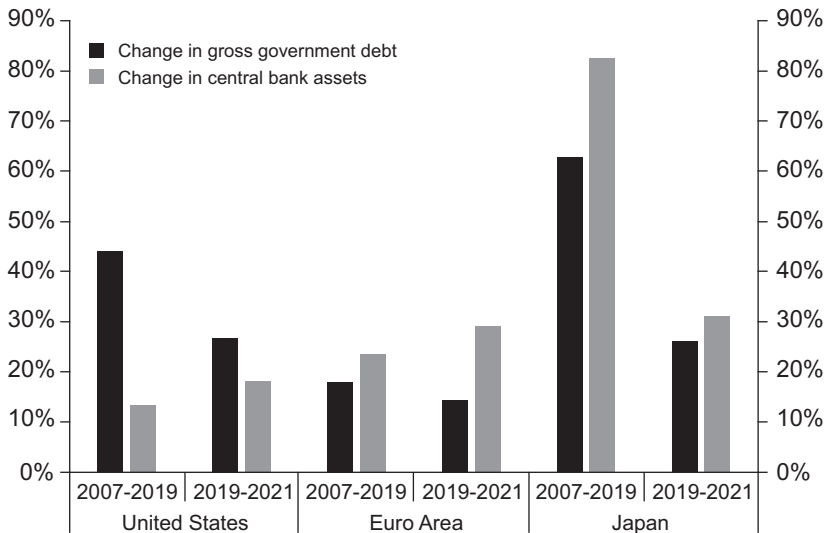
Before taking up this issue, it is worth mentioning that there also is a potential overlap between the LoLR and selective credit support. Bagehot's first rule of central banking is to never provide *unsecured* loans. Yet, to prevent runs in a period of stress, central banks need to announce in advance (and sustain in a crisis) policies on collateral valuation and haircuts. As a result, the stated willingness of the central bank as LoLR to accept assets on persistently better or worse terms can distort commercial banks' desire to engage in specific activities.<sup>8</sup>

There are two more serious problems: the blurring of lines between the MMLR and QE, and between QE and emergency government financing. The first arose in the United States during the early part of 2020. For at least a few weeks, the pandemic introduced dangerous new obstacles to policy transmission. Even the market for U.S. Treasury securities, thought to be the deepest and most liquid in the world, temporarily showed signs of severe stress.<sup>9</sup> To stabilize the market, from mid-March to early-April the Fed expanded its Treasury holdings by \$1 trillion. The intervention worked and liquidity returned quickly to Treasury markets. Nevertheless, U.S. central bankers failed to unwind their extraordinary purchases. Instead, they continued to increase their holdings, acquiring an additional \$1 trillion over the course of the next nine months, with the program continuing through 2021. What started as an MMLR operation became QE.<sup>10</sup>

Turning to the second major challenge, we need to distinguish monetary financing of the government from QE designed to stimulate aggregate demand. Unfortunately, during periods of overwhelming stress, this distinction may not be easy to make. For example, the extreme disruptions of the Covid pandemic gave rise to unprecedented peacetime coordination among fiscal and monetary policymakers. Chart 2 (below) highlights the resulting simultaneous (and ongoing) surge of gross government debt (in black) and central bank assets (in grey). Note that since 2007, central bank assets in the euro area and Japan have grown faster than the debt of the general government!

The time intervals shown in Chart 2 (below) make it appear that the United States is different. For example, Fed assets grew more slowly than U.S. general government debt over the period from 2019 to 2021. However, this pattern masks what occurred from April to July 2020.

**Chart 2**  
**Euro Area, Japan and the United States:**  
**Comparison of Change in Central Bank Assets vs.**  
**Change in Gross Government Debt, 2007-2019 and 2019-2021**  
 [% of GDP]



Note: the values for central bank assets are from December 2007, December 2019, and October 2021. Debt values are for the full year, including projections from the IMF for 2021.

Sources: Fed; ECB; IMF World Economic Outlook Database; FRED.

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Over this four-month span, the Treasury general account at the Fed increased by \$1.4 trillion, an amount equal to the increase in the Fed's Treasury bond purchases. That is, the Fed was *pre-financing* the federal deficit, purchasing bonds on a scale sufficient to allow the Treasury to accumulate deposits at the Fed. Later, from February to August 2021, the Treasury ran this balance down.<sup>11</sup>

### *THE RISK OF FISCALISATION*

Where does this lead us? What will happen if central banks continue down this road, expanding their direct efforts to influence an ever-wider range of financial markets and asset prices? The answer is that, as the central bank's balance sheet becomes larger and accounts for a growing share of intermediation, we will shift towards a world in which the state dominates credit allocation.<sup>12</sup> Should this happen, the dynamism of the economy and its ability to sustain even modest long-term growth would be called into question. Surely that is not what central banks intend as a goal of their stabilization efforts.

In fairness to central bankers, there are times such as the first months of the Covid pandemic when monetary authorities are under intense political pressure to expand their mandates, and may be the only policy agents with the appropriate tools. Not only that, but in a world of low interest rates, fiscal policy becomes the tool of choice for stabilization. Under these circumstances, it is extremely tempting (and very efficient) for the central bank to act as the fiscal agent for government finance. Such financing, however, is characteristic of the *fiscalisation* of the central bank.

To be sure, fiscalisation is considerably different from fiscal dominance, where fiscal policymakers control the volume of central bank money.<sup>13</sup> Some observers, however, may find this distinction disturbingly fine. In our view, the key danger from fiscalisation is that, when conditions become more serene, central banks will find it difficult to reverse the use of (or simply to stop using) the very politically sensitive tools that they introduced during crises. For example, how quickly will the Fed dispose of the liabilities of nonfinancial businesses and municipalities that it accumulated during the Covid pandemic? Will the ECB sell off government debt holdings that exceed pre-crisis norms?

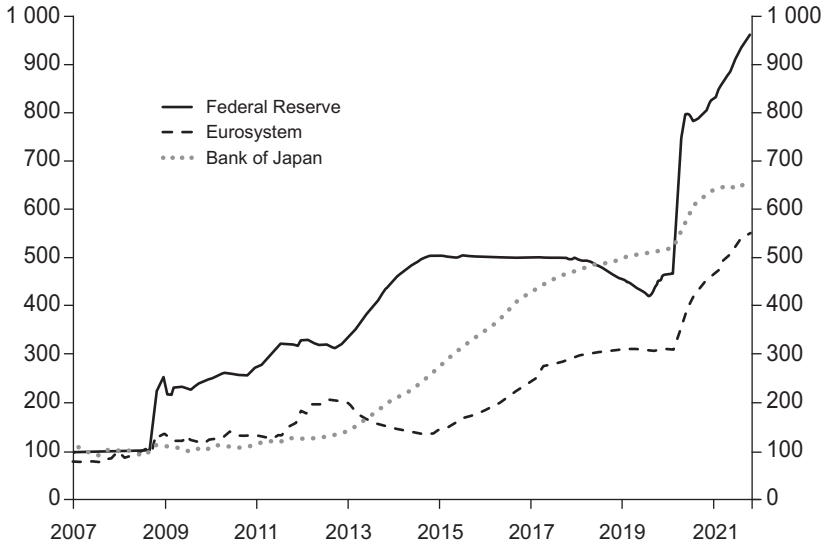
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The point is that – while fiscalisation need not lead to fiscal dominance and higher inflation – it undermines the market discipline that accompanies the private allocation of financial resources. History teaches us that such market discipline is key to the efficient use of labor, capital and other inputs in production, and to sustaining innovation and economic growth. Unsurprisingly, both theory and empirical evidence suggest that state-driven systems inefficiently shift resources away from their most productive use.<sup>14</sup> Indeed, we know of no advanced economies in which a state-controlled financial system has delivered rapid, broad-based economic growth over an extended period.

Unfortunately, as we write in late 2021, there are few signs that central banks will reduce the size of their balance sheets. Chart 3 (below) plots the level of assets for the central banks in the United States, the euro area, and Japan. To focus on the pattern of growth, we normalize each at their level at the end of 2007. For each central bank, the chart displays continuing increases. That is, after assets go up, they tend not to go back down. As former Bank of England Governor Mervyn King put it “[QE] tends to be deployed in response to bad news, but isn’t reversed when the bad news ends. As a result, the stock of bonds held by central banks ratchets up, expanding their balance sheets into the longer term.” Put slightly differently, there is a QE ratchet.<sup>15</sup>



**Chart 3**  
**Central Bank Assets, 2007-October 2021**  
 (monthly, end-2007=100)



Sources: Fed; European Central Bank; Bank of Japan.

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### LIMITING FISCALISATION

How can central banks avoid fiscalisation and the QE ratchet? In our view, they need to do two things: commit to structural distinctions between fiscal and monetary policy and communicate what we think of as a *balance sheet reaction function* that includes undoing crisis-driven additions to central bank assets.

Starting with institutional responsibilities, it is fiscal authorities that ought to make the unavoidably political choices that directly influence resource allocation. Governments already have a myriad of institutions for that. For example, they might provide government loan guarantee programs for housing, farm, small business, and student loans. Unelected central bankers should not control the scale and mix of programs like these that include as a primary purpose their impact on distribution. And governments should not conceal such politically sensitive fiscal actions on the balance sheet of the central bank. In a democracy, doing so lacks legitimacy and will become unsustainable.

As Tucker (2018) notes in his excellent book, *Unelected Power*, legitimacy requires that appointed technocrats eschew activities which focus on distributional concerns.<sup>16</sup> Tucker also highlights the need to

concentrate central bank authority to where (because of the problem of time consistency) its use is essential to achieving policy success. This means restoring (as quickly as possible) a narrowly defined mandate that focuses central bank policy on the traditional goals of economic and financial stability. More specifically, crisis interventions should not only be temporary, but should be reversed as soon as the crisis recedes.

At this stage, to ensure that central banks can do what they are designed to do well, we need to impose boundaries on the scope of what central banks are authorized to do, limiting both what they can buy outright and to whom they can lend. Doing this requires a fine balance, as we need to make sure that monetary policymakers can still provide aid in a crisis. At the same time, it should not be easy for them to evade the restrictions. Most of all, we need a system in which central bankers are not left feeling that they are the only game in town, so that when monetary policy hits the limits of its effectiveness – as it is likely to do in periods of low inflation and modest long-run growth – policymakers are not obliged to act in quasi-fiscal ways that threaten their legitimacy.

Turning to the second part of our solution, central banks need to clarify their balance sheet policy. That is, under what circumstances will they buy securities and when will they sell them. We are thinking of something like an interest rate reaction function. In normal times, central banks explain their interest rate policy actions with reference to a set of commonly understood indicators. These typically include the equilibrium rate of interest, deviations of inflation from the central bank's target, and measures related to growth or employment. While there is always an analytical framework underlying this, neither the policy actions nor the communication slavishly follows any specific algorithm. "Rule-like" policy is likely to be more effective because it is easier to make credible and easier to anticipate. But policy should never ignore circumstances where the underlying rules would be inappropriate or ineffective.

To avoid fiscalisation (and the QE ratchet), balance sheet policy needs to operate within an analogous framework. Not only should policymakers set out the contingencies under which they start and stop their purchases, or adjust the pace and breadth of asset accumulation, but there should also be clearly understood conditions determining when they will sell the assets they acquire. This second part bears a strong resemblance to the consensus that fiscal authorities need to ensure both sustainability and flexibility: namely, using boom periods to build up the space that allows policymakers to provide stimulus during recessions. In the case of central bankers, when markets are not in need of support and interest rates can be above their effective lower bound, they should seize the opportunity to reduce their asset holdings.

Importantly, providing clarity in advance regarding the circumstances of when and how this will occur is key to minimizing any disruptions that such actions might otherwise cause.

### CONCLUSION

To conclude, the actions of many countries after 1980, delegating monetary policy to independent central banks, have led to a major improvement in economic performance, helping to preserve stable prices while enhancing long-run economic growth. Fiscalisation puts these important achievements at risk in two ways. First, it reduces the credibility of the central bank's commitments to economic and financial stability, making it less effective in today's world, where expectations of future policy are key to current behavior. Second, it undermines a principle critical to making the delegation of authority sustainable: namely, that unelected central bankers avoid actions which focus primarily on distributional concerns.

Our proposals for structural distinctions between fiscal and monetary policy, and for a transparent central bank balance sheet reaction function that allows for public accountability, would each contribute to reducing the threat of fiscalisation. While the first of these may require governments to establish limits for central banks, central bankers can implement the second on their own. In our view, the sooner the better.

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### NOTES

1. In the case of the Eurosystem, the TARGET system continues to substitute for interbank lending flows that never returned after 2010. See Eisenschmidt *et al.* (2017) for a general discussion.
2. While we focus on three large jurisdictions, the balance sheets of numerous other central banks exhibit similar patterns. For example, as a fraction of Canadian GDP, the Bank of Canada's assets rose from 3.4% at the end of 2007 to 5.1% at the end of 2019, and currently stand at 20.1%. For the Bank of England, the ratio of assets to nominal GDP rose from 6.5% at the end of 2007 to 26% at the end of 2019 and to 39.9% in October 2021. In both cases, government bond holdings account for the bulk of assets.
3. See Fabo *et al.* (2020).
4. See Tucker (2014) for an extended discussion.
5. Examples include numerous 2007-2009 and 2020 U.S. programs aimed at money market funds, commercial paper markets and primary dealers.
6. Examples of MMLR operations include the classic July 2012 episode – Mario Draghi's "whatever it takes" – when the ECB offered a backstop for euro area sovereigns but ended up buying nothing. A second is the Federal Reserve's Secondary Market Corporate Credit Facilities.
7. Examples abound of central banks steering credit to specific sectors, regions or firms. One is the Eurosystem's sequence of three targeted longer-term refinancing operations (TLTROs). Also in this category are the Federal Reserve's Municipal Liquidity Facility and the Main Street Lending Facility that aimed to provide credit to local governments and small businesses, respectively.

8. These distortions could be an enduring feature of a central bank operating framework. A classic example was the pre-2011 willingness of the Eurosystem to accept the sovereign debt of all euro area Member States as equivalent collateral. Even today, with over 25,000 securities and more than 100 haircut categories, the Eurosystem's complex collateral framework has the potential to distort the allocation of credit.

9. See Cecchetti and Schoenholtz (2020a).

10. The contrast with the Fed's corporate bond intervention during the pandemic is notable. While the Federal Reserve's Secondary Market Corporate Credit Facility was authorized to purchase up to \$750 billion worth of private bonds, it never held more than \$14 billion.

11. See Cecchetti and Schoenholtz (2020b) for a more detailed discussion of this episode, along with an explanation of the mechanics of the relationship between the Federal Reserve's balance sheet and the level of Treasury cash balances.

12. The issuance of central bank digital currency creates this same risk. See Cecchetti and Schoenholtz (2021b).

13. See, for example, Schnabel's contrast of fiscal dominance to "monetary dominance" (Schnabel, 2020). In our view, what some observers refer to as *helicopter money* is the classic example of fiscal dominance. See Cecchetti and Schoenholtz (2016).

14. See, for example, Shleifer and Vishny (1994), Sapienza (2004) and Xiao and Zhao (2012).

15. See Cecchetti and Schoenholtz (2021c) for a more detailed discussion of this ratchet effect.

16. See also Cecchetti and Schoenholtz (2018).

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# THE FISCAL DIMENSION OF MONETARY POLICY AND CENTRAL BANK AUTONOMY: LESSONS FROM TWO CRISES

ATHANASIOS ORPHANIDES\*

**T**he global decline in the natural rate of interest that has been documented in the 21<sup>st</sup> 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.

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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.<sup>1</sup> 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*

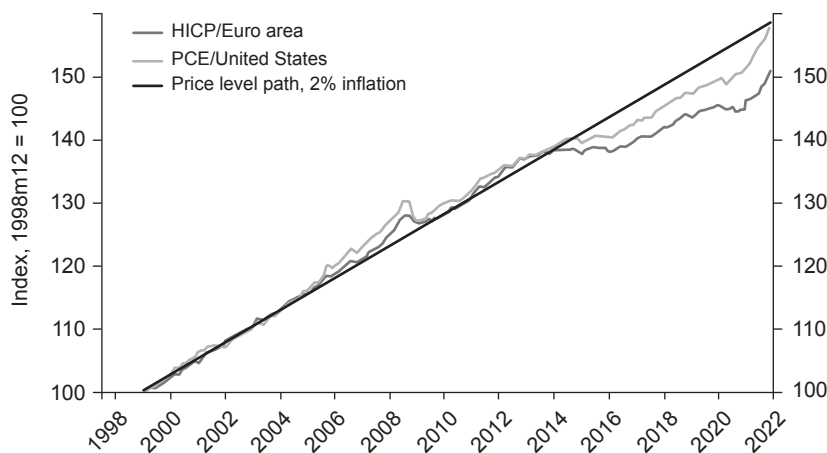
Charts 1 (below) compare the price level in the United States and the euro area, using the preferred metrics of the two central banks – the personal consumption expenditures (PCE) price index for the Fed and the harmonized index of consumer prices (HICP) for the ECB. The top panel compares the price 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.<sup>2</sup>

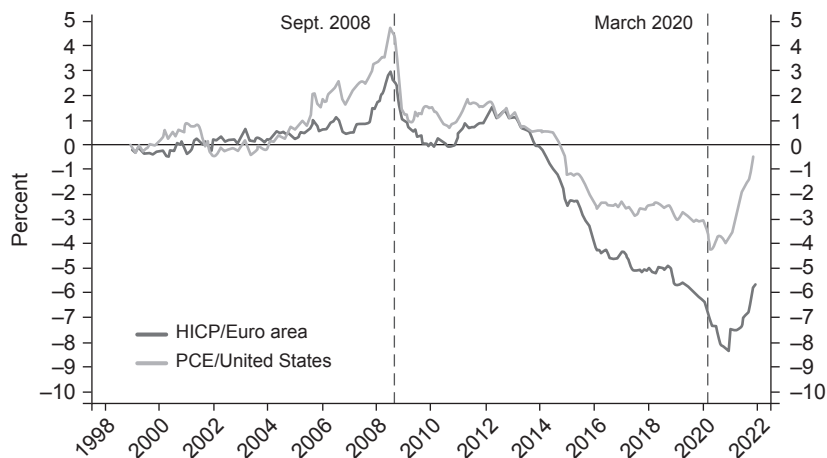
**Charts 1**  
**Price Level and Price Gap**

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



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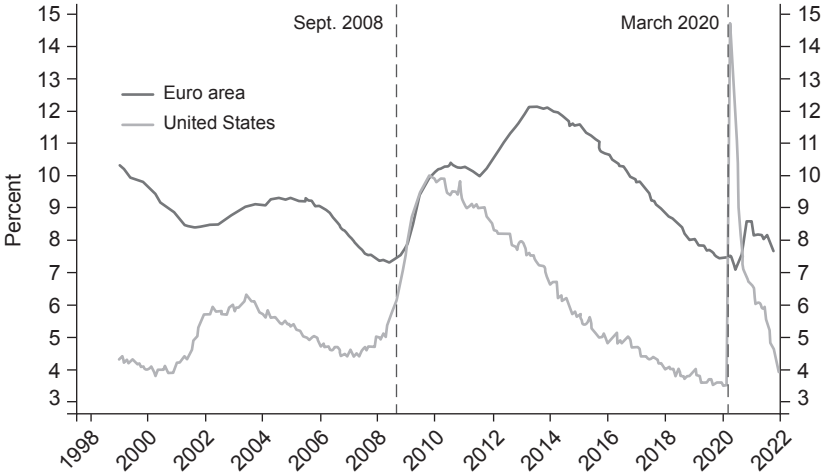
**Chart 1b**  
**Price Gap: Deviation of Price Level from Constant 2% Inflation Path**



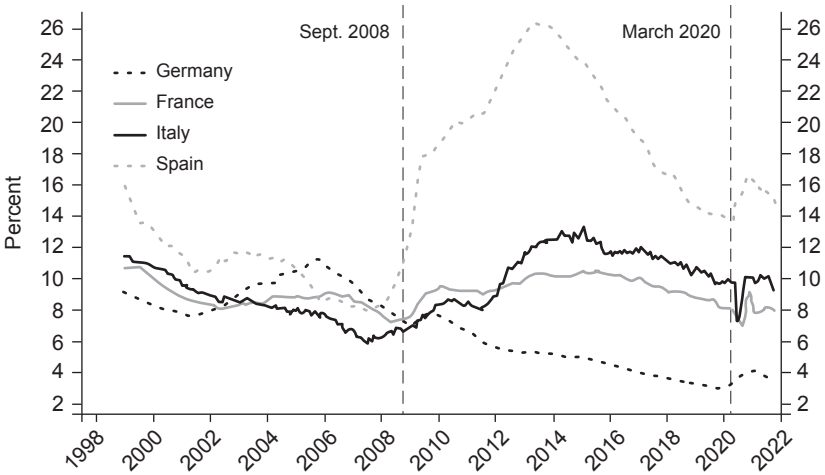
Sources for both charts: Federal Reserve Bank of St Louis; FRED; ECB SDW; author's calculations.

**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 were 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.

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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.

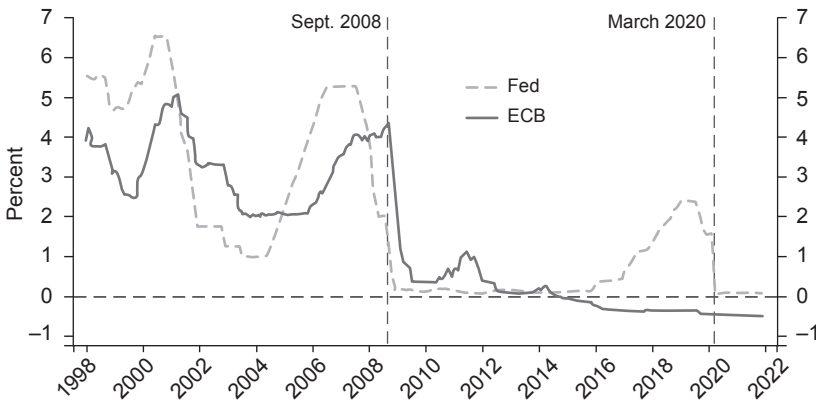
### *INTEREST-RATE AND BALANCE-SHEET POLICIES*

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.

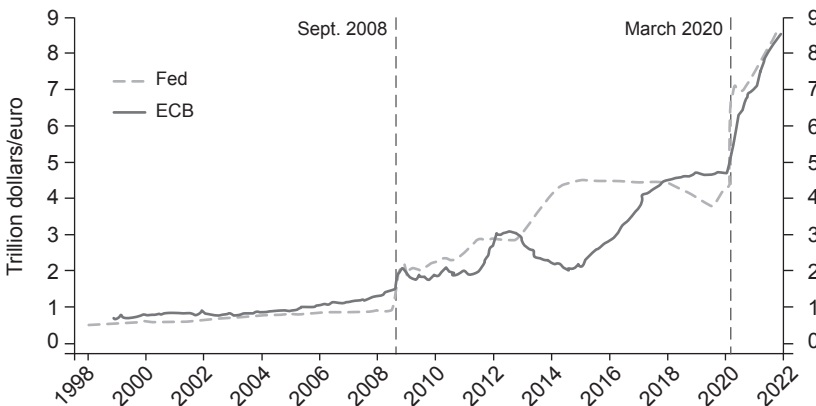
**Charts 3  
Monetary Policy**

**Chart 3a  
Overnight Interest Rates**



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**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.

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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.

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### *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-

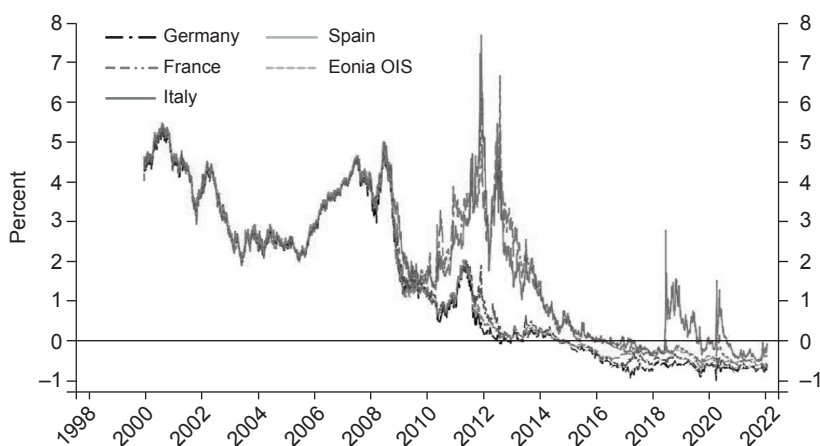
denominated government debt were small, and ECB monetary policy could be smoothly transmitted in a similar fashion in all Member States. Unfortunately, in the aftermath of the GFC, the ECB deviated from that policy. Since then, the euro area government bond markets have experienced occasional crises,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

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**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.<sup>3</sup> 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.<sup>4</sup>

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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.

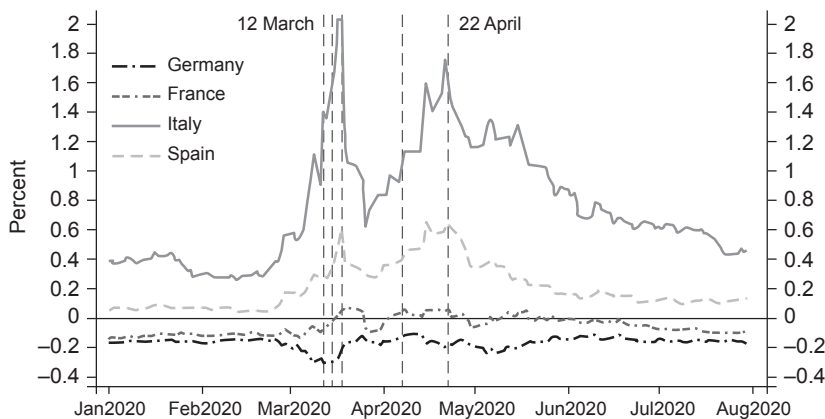
The ECB has recognized that the impairment of its monetary policy transmission hinders its ability to fulfil its mandate. On some occasions, the ECB has intervened to reduce the severity of the impairment, for example with temporary exceptions, and targeted asset purchases. Perhaps the best known such 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.

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## 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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WIDENING HORIZON:  
ADDITIONAL CHALLENGES



# CLIMATE CHANGE: WHAT ROLE FOR CENTRAL BANKS?

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## *THE POLITICAL CONTEXT*

Preserving our planet's resources is the defining issue of our age – and there is no time to waste. That simple yet far-reaching statement encapsulates why transitioning to a carbon-neutral economy is so crucial and has emerged as a cornerstone of international policy efforts. Most countries have committed to carbon neutrality by the middle of this century, yet few have defined clear milestones along the way that stake out a credible path to that objective.

As greenhouse gas emissions still mostly come without a price tag, climate change is a prime example of a negative externality: in their individual choices, economic agents do not sufficiently account for the external damage their choices entail for the environment and others. The intensity of climate change depends on greenhouse gas concentration levels in the atmosphere, a global public good that has been overused, and still is, for the benefit of the individual and to the detriment of society as a whole – a perfect example of the tragedy of the commons (Hardin, 1968). The negative consequences for the climate have been known for decades, and countermeasures are more urgent

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than ever. At the same time, given the intrinsic incentive to free ride, international cooperation and multilateralism is essential. The Paris Agreement was a quantum leap, but needs to be followed by swift collective action. Transitioning to carbon neutrality calls for a global effort by all sectors. That includes the financial industry, whose pivotal role was emphasised for the first time in Article 2.1c of the Paris Agreement, which calls for “finance flows consistent with a pathway towards low greenhouse gas emissions and climate-resilient development” (UNFCCC, 2015). In other words, the financial system needs to be instrumental in supporting the economic transformation.

### *CLIMATE CHANGE AS A SOURCE OF ECONOMIC AND FINANCIAL RISK*

In one way or another, economic agents will all be affected by climate change, its mitigation and the adaptation to it. While some will suffer because their business models are no longer profitable or their land becomes uninhabitable, others will benefit. The increased frequency and severity of extreme weather events poses significant risks to our economies. Consequently, climate change will affect key economic variables that have a bearing on the work of central banks (NGFS, 2019). In addressing these risks, the challenge is to transform our economies without compromising social stability. In this regard, adequate fiscal policies are crucial. Public expenditure is projected to increase considerably in the years ahead, not only to cover adaptation measures and reconstruction activities but also to preserve social equitableness. On top of that, large-scale public and private investment in mitigation action will be needed. In Europe alone, meeting the new 2030 emissions-reduction target will require an estimated €350 billion of additional investment annually (von der Leyen and Hoyer, 2021).

Channelling financing for the necessary transformation is precisely where a stable financial system is key. Yet climate change and climate policies themselves are major sources of financial risk, as has been widely acknowledged by central banks worldwide (NGFS, 2019). Central banks therefore have a duty to ensure that individual financial institutions, and the financial system as a whole, are resilient to these risks. Climate change has some peculiarities distinguishing it from other sources of risk, however, which make this matter more challenging (NGFS, 2018 and 2019):

- climate change affects all economic agents, and the risks it produces are economy-wide, spanning different regions and sectors;
- some form of climate-related risk will materialise in the future, though the exact timing, direction and intensity of the economic fallout of climate change are ex-ante unknown;



– the consequences of climate change are irreversible. As yet, there is no mature technology that could reverse carbon dioxide concentrations in the atmosphere at scale. Furthermore, if we pass certain tipping points of selected elements of the Earth system, this could cause significant impacts on human and ecological systems that might be irreversible (Lenton *et al.*, 2008; Lenton *et al.*, 2019);

– lastly, there is a tragedy of the horizon (Carney, 2015). Long-term thinking coupled with short-term action is essential for an early and orderly transition. This insight is largely based on the fact that “cumulative emissions of CO<sub>2</sub> largely determine global mean surface warming by the late 21st century and beyond” (IPCC, 2014). Reducing these emissions through unprecedented, “rapid and far-reaching transitions in energy, land, urban, infrastructure [...], and industrial systems” is therefore inevitable to limit global warming to 1.5 °C in the long term (IPCC, 2018).

The literature identifies two main transmission channels for climate-related risks that both have a bearing on the demand and supply side of the economy (NGFS, 2018): physical and transition risks. Physical risks can be either acute or chronic. Climate- or weather-related events, such as floods, storms and droughts, are acute in the sense that they occur at a point in time. Chronic risk, meanwhile, results from permanently changing climate or weather patterns such as temperature increases. Although acute physical risks are limited geographically, they can have a global impact. In a globalised world with closely intertwined markets, seemingly small disruptions to supply chains can have ripple effects on the world economy. The current shortage of microchips – aggravated by a severe drought in Taiwan – is a case in point (BBC, 2021). Alongside physical risks, there are also transition risks, which are the financial risks that result from adapting our economies to a carbon-neutral world. The corresponding climate policies can take different shapes: the introduction of a carbon price, banning certain products or technologies, or abolishing subsidies for “dirty” business activities. The possible phasing out of the combustion engine in vehicles is a recent and prominent example. On top of that, changing consumer preferences or market sentiment as well as shifts in technology are additional transition risk drivers (NGFS, 2019). If the regulatory or technological transition occurs unexpectedly or abruptly, it can lead to a sudden and massive revaluation of assets with potential financial stability implications.

Given their interdependent nature, physical and transition risks need to be considered and addressed simultaneously. The Network of Central Banks and Supervisors for Greening the Financial System (NGFS) has therefore identified two main dimensions that determine

the potential impact of physical and transition risks on the economy and financial system: the strength of the response, i.e. how ambitious and far-reaching mitigation measures are, and the transition being orderly or disorderly (NGFS, 2019). Transition risks to the economy and financial system are greatest in a scenario where mitigation measures occur in an unexpected or disorderly fashion, while combined physical and transition risks will be minimised in an early and orderly scenario. This fits in with the results of the ECB's economy-wide climate stress test (ECB, 2021a), which found that both non-financial corporations and banks benefit from early climate policy measures. The upside of an orderly and efficient transition to a carbon-neutral economy outweighs its short-term costs in the medium to long term.

Although climate-related financial risks have their own unique features, as set out above, they are treated as part of the traditional risk categories, like market, credit, business or operational risk. All these standard risk categories can include a climate risk dimension (BaFin, 2020). For example, an extreme weather event destroying a borrower's production facilities might lead to higher credit risk for lending banks.

#### *CLIMATE CHANGE AND CENTRAL BANKS' MANDATES*

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Just like any other economic agent, central banks have to grapple with climate-related risks. They regard climate-related risks as a threat not only to the economy, but also to the functioning of their own operational frameworks, though they do see scope to integrate climate-related risk into the latter (NGFS, 2020b). The main arguments put forward in favour of applying a protective, risk-oriented approach are (1) to mitigate climate-related financial risks, and (2) to safeguard financial stability. Those in favour of proactively supporting climate policy to ensure an orderly transition emphasise its importance as a prerequisite for the functioning of the monetary policy transmission channels, i.e. they establish a direct link to the primary mandate. A similar logic can apply to financial stability matters. Overall, the latter approach is more contentious and arguably blurs the line between climate and monetary policy.

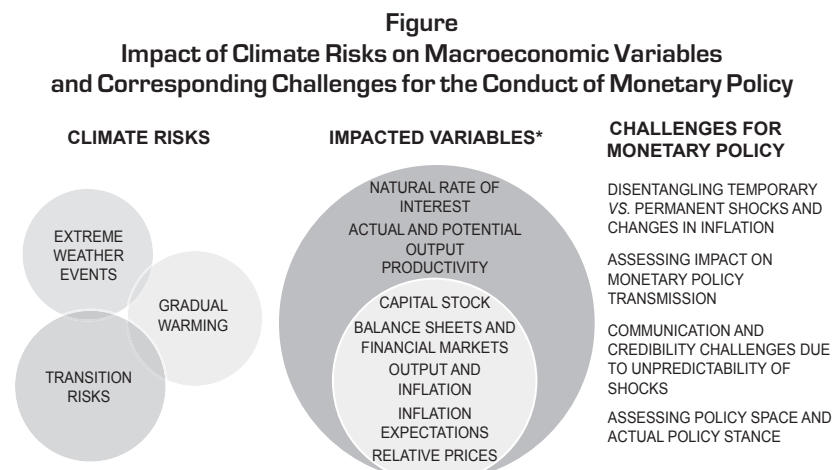
Ultimately, it is a central bank's legal mandate that determines its scope for action. Thus, a second way to approach the question of why central banks should care about climate change is to screen their mandates for explicit references to terms such as "sustainability", support of "economic development" or "government economic policy". If central banks' mandates mention terms like these, this could, in principle, justify climate-related action by central banks and provide some room for manoeuvre, even more so if their governments are already committed to climate action. An NGFS review of 107 central banks'

mandates has found that almost half of them have price stability as their sole primary objective, with the remainder having references to several primary objectives of equal rank (NGFS, 2020b). Roughly one-quarter of the central banks reviewed have a reference to sustainability matters within their mandate, but just 5% of them as part of their primary objective. By contrast, more than half of the central banks surveyed in the NGFS exercise are supposed to explicitly support economic development or government economic policy within their mandate, but only in 22% of the cases as part of their primary objective. These results are broadly in line with the findings of Dikau and Volz (2021), who base their own empirical analysis on the IMF's Central Bank Legislation Database and conclude that central banks have leeway to, and ought to, incorporate climate-related risks into their operational frameworks in their own best interest. Just as the mandates and traditions of central banks differ, so, too, will their policy actions in practice.

### *CENTRAL BANKS' ACTION ON CLIMATE CHANGE*

Having established that climate change has potentially far-reaching economic and financial consequences, it goes without saying that these will also – temporarily or permanently – impact core economic indicators that drive central bank policy, such as output, productivity or inflation expectations (see Figure below). As a result, central banks' mandates typically require them to address these consequences and thus climate change itself; however, it is an open question what actions

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\* For impacted variables, the larger, the longer the time horizon.

Source: NGFS (2020a).

central banks can take. Furthermore, does action on climate change really call for a new doctrine for central banks, or is it just a refinement of their traditional doctrine but still strongly rooted within it?

To deliver on its price stability mandate, a central bank first needs to better understand the consequences of climate change for the drivers and transmission channels of monetary policy as well as its policy toolkit. For central banks to uphold their reputation as authorities on economic modelling and forecasting, they need to revise and amend their models and analyses in the light of climate change. As they adapt their modelling approaches, they need to be transparent about the shortcomings of the economic models of climate change they use, which typically rely on a number of crucial and simplifying assumptions (Hansen, 2021). By doing so, central banks will add credibility to their analyses and forward guidance and heft to their communications. In a second step – translating their insights into actions –, central banks could adjust their operational frameworks, i.e. their credit operations, collateral frameworks or asset purchases. In this context, it is important to provide for the effectiveness of their toolkit while weighing up operational feasibility, the degree of risk protection provided, and the potential contribution to climate change mitigation (NGFS, 2021a). By communicating clearly and credibly on the economic impacts that climate change may cause and taking effective action to ensure price stability regardless, central banks enable economic agents to plan and make the long-term investment needed to adjust to these impacts (NGFS, 2020a).

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Incentivising the necessary investment furthermore requires trust in the stability of the financial system (Buch and Weigert, 2021). To safeguard the soundness and resilience of the financial system, macroprudential analyses and policies need to consider climate-related risks (Bolton *et al.*, 2020). Scenario analysis is one key tool to explore uncertain medium- to long-term developments, and central banks have joined forces and been crucial in designing scenarios commensurate with the requirements of assessing climate-related financial risks (NGFS, 2020d). Numerous central banks are working on adapting these scenarios to various economic contexts and their analytical objectives (NGFS, 2021b), and some have already run macroprudential stress tests on the basis of them (e.g. ECB, 2021a). Importantly, through the development of these scenarios, central banks also allow private market participants to examine climate-related risks based on a common set of assumptions, which is conducive to improving the overall quality of climate-related financial risk assessment (Bingler and Colesanti Senni, 2020). The fact that the scenarios are becoming

increasingly integrated into private sector-driven analyses and tools (e.g. MathWorks, 2021; S&P Global, 2021) thus represents an important step forward.

Raising awareness of climate-related risks in the financial sector and developing tools to gauge these risks for the benefit not just of central banks but also of market participants is crucial for addressing them. Hence, their mandate permitting, central banks, in their capacity as supervisors, have also adjusted their supervisory strategies, practices and expectations. Supervision of financial institutions is typically strictly risk-based and as such, it has to account for all material risks, including those induced by climate change. Central banks and supervisors have identified best practices and communicated supervisory expectations (NGFS, 2021c). In addition, central banks have, to an increasing extent of late, also been defining criteria for microprudential, bottom-up stress tests, thereby raising awareness and forcing supervised institutions to analyse their exposure to the specified climate-related risks (e.g. Baudino and Svoronos, 2021; ECB, 2021c).

The degree to which protective, risk-based measures can be successful depends on central banks' ability to analyse risks appropriately and, therefore, on the quality of the data and indicators used to measure climate-related risks and opportunities. Reinforcing a protective approach by taking proactive measures as outlined below allows central banks to support the availability, accessibility and quality of data and indicators, improve transparency more generally, and lend (indirect) support to certain market segments or foster the adoption of technology to scale up sustainable investment.

Currently, the market still lacks comparable, consistent and decision-useful climate-related information, and consequently, financial markets seem to be underestimating material climate-related financial risks (CDP, 2020). While it is up to policymakers and standard setters to implement mandatory reporting, central banks can act as catalysts. They could, for example, link the eligibility of assets to certain climate-related reporting requirements and only purchase securities or accept them as collateral if their issuers disclose key climate-related indicators. A similar logic can be applied to the use of external credit ratings by central banks, confining their use to credit rating agencies that adequately consider climate-related financial risks as part of their risk assessments (Mauderer, 2020; Weidmann, 2021). Both approaches would increase market transparency and facilitate the uptake of similar measures in the financial industry. Consequently, markets would be more efficient in pricing climate-related financial risks and better placed to allocate funds efficiently.

To overcome certain market barriers, central banks can also incentivise the use of technology. One recent initiative saw the Banca d'Italia join forces with the BIS Innovation Hub to launch the G20 TechSprint 2021 on green and sustainable finance during Italy's G20 presidency in 2021. The idea behind this worldwide competition was to seek innovative solutions to better connect projects and investors, reduce information asymmetries, and better assess physical and transition risks with the help of state-of-the-art technology. Another way in which central banks can foster financial innovation and lend support to new sustainable finance market segments is to adjust their collateral policies accordingly. For example, the ECB decided to accept sustainability-linked bonds as collateral for its credit operations and to make them eligible for outright purchases, provided they comply with all other eligibility criteria (ECB, 2020).

In addition, numerous central banks around the world have used part of their portfolios to support climate change mitigation by developing and implementing sustainable and responsible investment (SRI) strategies. According to an NGFS survey among forty central banks, their main reasons for adopting SRI practices are reputational risk and setting a good example (NGFS, 2020c). Alongside typical financial objectives that aim at increasing risk-adjusted returns, there are extra-financial considerations that central banks mention in this regard as well. The underlying rationale here is to achieve a positive real world impact, for instance by financing the carbon-neutral transformation. The BIS is facilitating similar steps thanks to the launch of two green bond funds: one denominated in euro, the other in U.S. dollars (BIS, 2021a). By investing in these open-ended funds, central banks and official institutions around the globe can allocate capital to green projects, follow up on their own environmental targets, and further stimulate the growth of the green bond market. The success of this initiative is underlined by the fact that the BIS recently announced the launch of a complementary Asian green bond fund in early 2022 (BIS, 2021b).

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## CONCLUSION

There can be no doubt that climate change affects central banks' core tasks and operations and that this impact may increase considerably in the future. As a result, the need for central banks to account for climate change and the risks it entails is self-explanatory. What is also evident, though, is that while the topic of climate change may be relatively new to central banks, it is nonetheless a concept that is deeply entrenched in their traditional mandates and hence does not constitute or require a new doctrine. On the contrary: it is more about a modern and

timely interpretation of central banks' long-standing objectives, which mainly require them to preserve price stability and sometimes also to facilitate sustained growth, promote employment or safeguard financial stability.

Counting on new doctrines or assumed mandates to explicitly address climate change would lead to demands and expectations that central banks would not be able to meet. Climate policy should lie first and foremost in the hands of elected governments and there is no doubt that fiscal policies are the most efficient way to incentivise the transition to a carbon-neutral economy. As a result, as central banks address climate change, they need to be careful to frame it in the context of the traditional doctrine and in that context alone.

While climate-related risks have only been on central banks' agenda for a few years now and many challenges remain, there is no denying that central banks have also made great strides in terms of facing up to the impact of climate change. The Eurosystem is a case in point: in its recent strategy review, it acknowledged the impact climate change and the transition to a carbon-neutral economy may have on its ability to fulfil its mandate and, thus, committed to revising and expanding its analytical and modelling capacities in this area considerably. This will entail specifying technical assumptions on climate-related (fiscal) policies, such as carbon pricing, as well as assessing the importance of these policies or weather and climate data for the quality of economic forecasting. The Eurosystem published a multi-year action plan outlining the ways in which to address and account for climate-related risks (ECB, 2021b), including adapting its monetary policy operations with respect to disclosures, risk assessment, the collateral framework as well as purchases of corporate sector assets. In addition, climate stress testing will become a staple tool, while new statistical indicators and collections are to be developed to improve transparency and the quality of data used to examine financial risks from monetary policy transactions. All these measures should, however, be considered in the context of the Eurosystem's core mandate, which is to preserve price stability, as well as its supervisory duties.

Putting this plan into action will not be easy – not for the Eurosystem and not for other central banks aiming to take similar measures. As they face much the same challenges, cooperating and coordinating internationally will allow them to learn from each other, and frontrunners will lower the barriers for others to follow suit. This is the very spirit of the NGFS and the reason for its success. Central banks' role in addressing climate change is a supporting one, but one that they have assumed in earnest.

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# THE ASYMMETRIC RELATIONSHIP OF CENTRAL BANKS TO MARKET-BASED FINANCE: WEIGHING FINANCIAL STABILITY IMPLICATIONS IN THE LIGHT OF COVID EVENTS

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Central banks today operate at the center of a very fragile and volatile financial system. With no or very little control over the pro-cyclical aspects of this system during the upswing, central banks today act as its safety net if disturbances occur, acting not only as the lender of last resort for banks, but also as the market maker of last resort and the investor of last resort for financial markets as a whole (Mehrling, 2010). If this hypothesis needed any further confirmation after the global financial crisis of 2008, the Covid crisis and the March 2020 “dash for cash” have indeed proven the point. Based on their function as the de facto system safety net, Western central banks have engaged in massive liquidity injections, using emergency liquidity facilities as well as new rounds of quantitative easing (QE) to reestablish financial stability (Schnabel, 2020). Most strikingly, the Federal Reserve (Fed) intervened in financial markets in the second half of March 2020 to buy inventories of broker-dealers, increasing its holdings of Treasury bonds by 775 billion dollars and 291 billion dollars in agency MBS (Fleming and Ruela, 2020). These

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massive asset purchase programs in the space of two weeks almost equal those made after the global financial crisis, when the Fed expanded its total portfolio from \$920 billion in December 2007 to \$2.1 trillion in June 2009.

The central proposition I would like to defend in this essay is that this latest episode reveals an asymmetry in the policies followed by central banks to prevent financial instability, which are quick and resolute in moments of crisis (from the financial crisis to the Covid crisis, including both QE and emergency liquidity facilities), but slow and hesitant, if not ineffective, in moments of financial boom. This has been the case since 2015, during which time anti-cyclical macroprudential policy instruments have proved largely ineffective, have been hardly used or have been non-existent (Thiemann, 2019). I will suggest that one reason for this asymmetric relationship is that central banks can exert no or only very limited control over the behavior of actors in the shadow banking sector, a sector of credit intermediation that is largely outside the prudential control of central banks. At the same time, central banks have come to explicitly backstop the system of market-based financing, providing liquidity and thereby “unclogging” the system of private liquidity provision when a “tail risk liquidity event” (BoE, 2021) materializes.

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As a consequence of this asymmetric body of financial stability policies, central banks find themselves today in an untenable configuration: they are forced to intervene as market makers and investors of last resort in a financial system whose expansive tendencies they do not control. Their growing balance sheets, a result of this attempt to quell financial instabilities, lead furthermore to growing demands of societal stakeholders to use central bank balance sheets for purposes other than rescuing the financial system, as systemic risks are arguably extending beyond the financial system (e.g. climate change). Central banks thus find themselves at a crucial crossroads in terms of their institutional evolution. One way to address this problem, this essay suggests, is for central banks to either gain more control over the pro-cyclical behavior of the shadow banking system before a crisis or, on the contrary, to shrink the safety net of the system of market-based financing.

This asymmetric setup leads us to quickly revisit the growth of pre-crisis market-based financing and the macroprudential regulatory reform efforts of the shadow banking system as they were envisioned immediately after the financial crisis of 2007/2008. We will show how the weak implementation of reforms left central banks in charge of a financial system that they are barely capable of governing. We will then explain how this system of market-based financing proved to be non-

resilient in the face of the Covid shock, elaborate on the most recent regulatory developments and the limited likelihood that this configuration will change, and conclude with some recommendations.

*THE PRE-CRISIS GROWTH OF THE SHADOW BANKING  
SYSTEM AND ITS PRO-CYCLICAL EFFECTS*

In the three decades before the financial crisis of 2007, a system of credit intermediation emerged that operated outside of the perimeter of banking regulation, although banks were at its center (Claessen and Ratnovski, 2015). This system, which can best be described as “money market funding of capital market lending” (Mehrling *et al.*, 2013), linked cash pools that were risk averse but cash rich with risk-embracing investors such as hedge funds, which were cash poor. This chain of intermediation, which often placed bank holding companies at their center (Pozsar *et al.*, 2010), operated through repo markets and intermediate investors, such as money market mutual funds, which promised investors absolute security. To achieve it, security precautions were used, linking market valuation practices to funding liquidity (e.g. in the haircut practices of repo lending), making the system subject to strong pro-cyclical feedback loops between market liquidity and funding liquidity (Brunnermeier and Pedersen, 2009) both in good times and bad (Adrian and Shin, 2010). The financial crisis of 2007/2008, which unfolded as a run on this shadow banking system (Gorton, 2010), demonstrated the pro-cyclical aspects of the system and its need for a public safety net.

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In the moment of crisis, pro-cyclical feedback loops between market valuation of assets and leverage gave rise to a major liquidity crunch in 2008, leading to a massive deleveraging in the shadow banking system (*ibid*). To counter this development, central banks provided emergency liquidity facilities to backstop all the markets and instruments involved in the production of credit, including money market funds (MMFs) and the repo market, thereby assuming the role of market maker of last resort (Mehrling, 2010). The enormity of the rescue operation by central banks was to provide a major impetus for post-crisis regulatory initiatives, yet as I will show below, little to nothing was achieved in terms of limiting the pro-cyclical feedback loops inherent in this system of credit intermediation.

*UNFINISHED BUSINESS: MACROPRUDENTIAL  
REFORM EFFORTS (2009-2015)*

As a reaction to the crisis, the G20 charged regulatory bodies, under the guidance of the newly formed Financial Stability Board (FSB), to

engineer a reform of the financial system that would both increase the resilience of the financial system and tackle its pro-cyclical tendencies (G20, 2009). Accordingly, the first leg of reform efforts post-crisis aimed to increase the resilience of the banking system and reduce the role of bank holding companies in the shadow banking system. In this sense, the reforms can be deemed largely successful, at least in the light of the recent Covid crisis (Schnabel, 2020). The second leg of reforms were directed at the pro-cyclical aspects of the shadow banking system (FSF, 2009; CGFS, 2010). These reform efforts in turn can be deemed largely unsuccessful, also as evidenced by the Covid crisis (Schnabel, 2020). Opposition by market regulators, in addition to difficult coordination among prudential regulators internationally, meant that reform efforts to reduce the liquidity risks inherent in the mutual fund industry (in particular MMFs), as well as in the repo market, did not achieve the desired aims.

With respect to MMFs, in 2012 the SEC (Securities and Exchange Commission) refused to endorse far-reaching reform efforts for MMFs. The watered-down reform efforts largely left the on par character of MMFs intact (Thiemann, 2018). Attempts to address the pro-cyclical character of the repo market, by installing both higher haircuts through the cycle, as well as counter-cyclical haircut add-ons (CGFS, 2010; FSB, 2012), faced resistance from the Fed, which worried about problems of regulatory arbitrage and the difficulty of internationally coordinated action (Thiemann *et al.*, 2018). In the end, these reforms merely implemented a through-the-cycle haircut so low that it was not binding. Similarly, the project to impose such haircut measures on central counterparties, to be set and modified by the regulators, encountered resistance by market regulators. In the end this merely led to regulatory requests to CCPs to ensure that their risk-management systems are not pro-cyclical (as enshrined in EMIR, *ibid*), thereby granting regulators no capacity to directly influence pro-cyclical developments in either the upswing or downswing.

Ironically, the only regulatory reform efforts with a marked impact on the shadow banking system were those affecting the activities of large bank-holding companies within it (e.g. regarding their role as a safety net for the ABCP market or their role as derivatives dealers, to be replaced by the mandatory clearing of standard derivatives through CCPs). With respect to the repo market, two new regulations installed by Basel III, namely the net stable funding ratio and the leverage ratio, particularly impacted the role of large dealer banks within the repo market. These measures made extending liquidity through reverse repos costly for broker-dealers in terms of balance sheet space, somewhat limiting the capacities of these private market makers to

make markets under all circumstances (Liang and Parkinson, 2020). These regulatory measures, which provoked several instances of short-term market turmoil (first in October 2014, then in September 2019) necessitated several central bank interventions as market maker of last resort, with the Bank of England taking a very proactive role in this regard (Carney, 2013, as cited in Birk and Thiemann, 2020). Overall, these increasing linkages of central banks to the repo market, both as absorbers of excess liquidity in reverse repos for MMFs, but also as providers of liquidity for broker-dealers, meant that the liquidity safety net of Western central banks for the system of non-bank financial intermediation became ever more explicit.

Despite this somewhat limited success in the reform efforts, which gave central banks little or no control over the pro-cyclical dimension of non-bank financial intermediation, in 2015 the FSB declared its mission of “transforming shadow banking into resilient market-based financing” had been largely accomplished. Unsurprisingly, given the imbalance between stringent regulatory measures for the banking system and the lax regulation of the shadow banking system, the expansion of credit in the financial system from 2010 to 2020 then occurred primarily within the shadow banking system. In particular, the sector of hedge and investment funds almost trebled their holdings of credit-related assets in this period, reaching 11 trillion dollars in 2020 (FSB, 2021a, p. 8). This now expanded shadow banking system, the limited reforms and developing central bank safety nets were to be put to the test by the liquidity events in March 2020, which were linked to the eruption of the Covid crisis (FSB, 2020).

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### *THE COVID CRISIS AND THE DASH FOR CASH*

During the Covid-related events, the resilience of market-based finance was found wanting (BoE, 2021), as central banks had to intervene by using the newly established direct links through the repo market facilities, but also by reinstating the emergency liquidity facilities of the 2008 crisis and initiating new rounds of QE. These events, which erupted in the third week of March, known as the “Dash for cash” (FSB, 2020), can be described as a classic liquidity crunch, where the sudden demand for cash led to strains on the financial system. As a consequence, MMFs faced massive redemption requests, and the repo market was essentially clogged up, with broker-dealers refusing to make markets since they were overwhelmed by demand (Liang and Parkinson, 2020, p. 6).

In the end, what calmed the market in this situation were direct asset purchases by central banks, rather than emergency liquidity measures or the repo facilities (BoE, 2021). Crucial interventions were the

purchase of more than 670bn dollars of assets in March 2020 by the Fed, freeing broker-dealer balance sheets (Schrimpf *et al*, 2020, p. 6), the ECB's Pandemic Emergency Purchasing Program of 750bn euros, announced in March 2020, as well as the Bank of England's purchases of 200 bn pounds of gilts in the same month (House of Lords, 2021). These efforts were largely successful, as recent reports on the event confirm (*ibid*; Altavilla *et al*, 2021)<sup>1</sup>. These events not only revealed once more the inevitable liquidity safety net that central banks provide for non-bank financial intermediation, but also that the magnitude of the safety net most likely exceeds repo facilities and instead requires direct central bank purchases of assets.

### CURRENT REGULATORY CONSIDERATIONS AND OUTLOOK

Following these events, both institutional reforms of central banks' links to the system of non-bank financial intermediation as well as a debate on broader regulatory reforms have ensued (FSB, 2021a). In line with the trend of ever-more explicit linkages to the system of non-bank financial intermediation, the Fed transformed its emergency repo facility into a standing repo facility in July 2021, offering to permanently engage in repo transactions with broker-dealers and commercial banks. Moreover, experts linked to the Fed are debating extending this facility to non-banks, as well as extending the role of CCPs in repo markets (Liang and Parkinson, 2020; Duffie, 2020), which most likely will further increase the role of this critical infrastructure. Finally, a permanent loosening of the leverage ratio for broker dealers is being discussed.

Yet recent central bank debates point to the fact that these changes might not be sufficient, and that market-based finance might well require a central bank safety net that extends beyond these repo facilities. As the Bank of England clarified in a recent report on the resilience of market-based finance, "while these facilities proved effective in supporting resilience and preventing stress amongst banks, they were not sufficient to address the scale of stress in the wider financial system, and in particular that amongst non-bank financial institutions. Asset purchases implemented under QE were needed to effectively restore monetary and financial stability. Other major central banks took similar action to tackle market dysfunction in core markets." (BoE, 2021).

This suggests to the authors that it might be necessary to extend liquidity to non-banks directly in order to tackle 'tail-risk liquidity events', which leads them to weigh the option of buying or selling directly from and to non-banks, rather than engaging in general QE (*ibid*). Institutionalizing this role, rather than executing it on an ad hoc



basis, would require central banks specifying rates and conditions of access to such non-banks *ex ante*, which would have to be broad enough to stem potential liquidity shocks, all the while limiting excessive risk taking, as well as the risks to central bank balance sheets (*ibid*). As is evident from these conditions, setting up such a venue, which would institutionalize the role of central banks as investors of last resort, would require a tremendous balancing act, managing the trade-off between moral hazard regarding private risk-taking and an effective central bank safety net.

In the context of these considerations, a question arises: how much control do central banks have regarding the credit expansion tendencies of the system of non-bank financial intermediation and what impact would such a safety net have on these tendencies (moral hazard)? If its expansionary tendencies remain outside of their control, as is the case today, central banks should seek to avoid backstopping it, as such accommodation of expansionary practices would expose central bank balance sheets to substantial and increasing risks. On the other hand, if central banks decide to extend the safety net to these players, they need to ask for substantial reforms in order to reduce the fragility of the market-based system of credit production and the expansion of their prudential capacities to guide the pace of credit creation, including over CCPs.

Such an expansion would have to be accompanied by an expansion of the regulatory oversight and control over these non-bank entities and the repo market, which largely failed to occur after 2008. Reform efforts should include stringent reforms of MMFs to substantially limit the on par convertibility of MMF deposits. While several of such reform measures are currently under consideration at the national and international level (FSB, 2021b; FSOC, 2021), central banks should not count on such measures being enacted. Many of these reform efforts were already envisaged in 2012, but not enacted due to resistance by the SEC and the MMF industry lobby. The question that arises is whether the Covid crisis experience changes this state of affairs.

Central banks should also seek to obtain the right to impose a stringent through-the-cycle haircut and a counter-cyclical capital add-on to haircuts in the repo market, a demand they voiced in the aftermath of the crisis (CGFS, 2010). Such tools would allow central banks to gain some control over pro-cyclical expansions of credit in the system of non-bank finance, both in the upswing as well as in the downswing. Similarly, a greater role for CCPs in the clearing of the repo market is advisable. The question has arisen once again regarding control over the procyclical margining requirements of these actors, both in the cyclical upswing as well as the downswing. As things stand,

central banks today are the de facto liquidity backstop of this critical infrastructure, whose behavior they most often do not directly control or supervise. If these reforms do not occur, and the safety net is nevertheless extended, central banks risk continuing a process that has led them to be the final backstop of a financial system whose dynamics they no longer control.

## NOTES

1. Regarding QE, the House of Lord report states that “quantitative easing is particularly effective as a tool to stabilize financial markets [...] an effective monetary policy tool when it is deployed at times of crisis, when financial markets are dysfunctional or in distress” (House of Lords, 2021, p. 19). Similarly, the ECB, when reviewing its pandemic emergency purchasing program, asserts that “PEPP averted an escalation of tail risks associated with pro-cyclical financial amplification mechanisms” (Altavilla *et al.*, 2021, p. 29).

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THE SOVEREIGNTY OF MONEY  
AND ITS HISTORICAL  
TRANSFORMATIONS: THE INVENTION  
OF CENTRAL BANK DIGITAL MONEY  
IN THE 21<sup>ST</sup> CENTURY  
AND ITS GEOPOLITICAL  
CONSEQUENCES

MICHEL AGLIETTA\*

NATACHA VALLA\*\*

*“It is in money that the modern  
spirit finds its most perfect expression.”*

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*Georg Simmel*

**M**oney: a public and political asset by definition? Is this the right way to address the question of the future of money? If money has a future, it is because it has a history that allows us to perceive what the sovereignty of money is. It is also a daily experience. We feel that to be deprived of it, is to be denied our dignity, that money is a fundamental social link.

Determining the nature of money requires a multidisciplinary approach, in which history must play a leading role, but also politics, law, sociology, and economics. Thinking about money means trying to understand the complexity of the payment system. This multidisciplinary approach is all the more necessary as we are living in the first decades of the 21<sup>st</sup> century, under the advent of the digital era which has already caused an upheaval in payment systems and which promises even more considerable innovations, with a major geopolitical impact. It is nothing less than the transition from a hierarchical international

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monetary system under the hegemonic preponderance of a key currency, in this case the U.S. dollar, to a multilateral system with institutionalised cooperation. Such a transformation is crucial to address the existential threat of the global climate and ecological challenge. The challenge is therefore money for political ecology.

We will therefore proceed with a three-part presentation. In the first section, we need to convey what monetary sovereignty is. We will then examine the arcane invention of the 21<sup>st</sup> century's radical monetary innovation: central bank digital money (CBDM). In the last section, we will address the major geopolitical question of this decade in the field of money: restructuring the international monetary system into a multilateral system of institutionalised cooperation.

### *MONEY IS SOVEREIGN*

Money, as an attribute of sovereignty, has its roots in history with the creation of the State. This occurred in Mesopotamia over five thousand years ago with the creation of the Sumerian Empire. Of course, money existed in the Neolithic age, but it represented the greatness of people in rituals that regulated gift-giving relationships and celebrated the founding myths of communities.

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It was population movements that established the city between the Tigris and Euphrates Rivers. The result was a shift away from the sacred aspect and the emergence of the Empire, i.e. a public power central to the community. It is the institution of politics that makes sovereignty a separate authority, dominating society, but recapturing it in its logic of abstraction: delimiting space (us and others), defending borders, putting standards of measurement into place, identifying subjects, counting objects on the basis of an instituted unit of account. The logic of equivalence and counting is inherent in politics. Two ways of expressing this formal logic appeared together, writing and money. These two logical instruments are within the realm of language, i.e. that gives meaning to others. Money is the language of numbers called value. Every language has a grammar, i.e. a system of rules. The grammar of value, shaped by money, is the payment system.

In contemporary societies, political and monetary considerations share the same objective of social cohesion: the adherence of citizens to the law for the former, the acceptance of monetary rules in exchanges for the latter. Therefore, the two institutions carrying the authority of public power, the State and the central bank, are placed under a single principle of sovereignty: the constitutional order. It follows that the links between the State and the central bank are organic, while guaranteeing the legal independence of the central bank within the govern-

ment. The Euro is no exception. It was created by international treaty, approved, and constitutionalised by the Parliaments of Member countries. It nevertheless adds an international dimension, enshrined in European law recognised by the Member states, which gives the European Central Bank (ECB) its legitimacy.

We can then state more fundamentally the nature of the social link called “payment”, which is the implementation of the language of number called “value”. It is the designation of the official, i.e. legally recognised, unit of account on which the social link called “payment” depends. This is what society, in the dimension of economic relations (all the owners of money), gives back to each of us in consideration of what it deems we have brought to it through our activity. When the payment is final, society has done justice to the joint performance of the activities and a value has been socially recognised.

But the money transferred between two exchangers is only directly a final payment if it transfers the means of payment issued by the central bank. In the case of a cheque or bank credit card, the transfer is not validated by society. For it to become a recognised value by society, it must be part of the settlement clearing procedure for all daily payments, made on the books of the central bank. Through the payment system, money is the foundation of value, which is relational, not substantial. Through the process leading to the finality of payments, money makes society. It follows that the evolution of payment systems is part of the transformation of societies in two interacting forms of change, political change and the evolution of payment technology.

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### *THE RADICAL MONETARY INNOVATION OF THE 21<sup>ST</sup> CENTURY: CBDM*

At the beginning of the 21<sup>st</sup> century, the first generation of digital age innovations was characterised by the opening up of payment systems, previously closed and tiered within the banking system, to non-bank providers of unregulated payment services. These open payment networks are attractive because they promise access to payment systems for millions of unbanked people around the world. But the development of e-commerce, calling for the emergence of currencies dedicated to the online world, has given rise to the oligopolistic concentration of a capitalism of platforms, threatening to lead to the capture of payment systems by unregulated private monopolies, the Bigtechs.

Because payment systems are networks with dynamics driven by scale and scope effects, competition from private payments systems can only lead to massive liquidity shifts, leading to the collapse of systems unable to reach the minimum critical size to the point of concerted

oligopoly or monopoly. In any case, this would lead to the destruction of monetary sovereignty. A crucial dimension of the social link would shift to the domination of private interests. Facebook for example has 2.5 billion users.

The exploitation of private personal data has become a source of revenue through consumer behaviour monitoring. Control over money is the ultimate lever for extracting information, thanks to access to transactional data. It signals a worrying drift where payment systems would come under the control of private players outside any legally recognised regulation. Such a development is the source of gigantic revenue accumulated by Bigtechs, the economic, political, and societal stakes of which, are extremely high.

*The challenge of Bigtechs' takeover of payment systems:  
capturing data and shaping consumer behaviour*

In the initial LIBRA project and its subsequent variations, technological innovations are combined with a certain ideology. This project is part of the invention of *stablecoins*, which are payment systems pegged to one or more legal tender currencies. LIBRA was to be defined by its own unit of account, i.e. a basket of official currencies of its own choice, to establish a universal currency. According to Facebook's manifesto, this unit of account was to be backed by a pool of "real assets", consisting in a basket of bank deposits and short-term government securities, held on a one-for-one basis for each LIBRA unit issued.

According to the launch manifesto, LIBRA was to be a non-profit organisation based in Geneva. Its role was to ensure the governance of the system. Its members were to be the chosen nodes of the network allowing the validation of payments, so the LIBRA blockchain was a permissioned blockchain.

The idea was to create a global currency that was entirely private and convertible into any national currency. In short, Facebook wanted to solve, with LIBRA, the problem of the incompleteness of international currency under the leadership of a private monopoly. The non-profit organisation managing the reserve had to be prepared to buy any LIBRA unit presented for conversion at a price equal to the value of the basket.

Not surprisingly, such a claim was met with an outcry from political and monetary authorities, as well as financial regulators in the United States and Europe, who were convinced of the unsustainability of the project and the threat it posed to monetary sovereignty. Facebook thus had to drastically reduce its ambitions. The group had to come to terms with the creation of a digital currency pegged to the dollar, called Diem.



Following the Facebook avatars, the way was open for the fundamental innovation of the digital economy, directly expressing the permanent nature of monetary sovereignty: CBDM.

*The challenge of central bank digital money  
in digital payment systems*

With the possibility of issuing CBDCs (central bank digital currencies), central banks are about to create a “monetary anchor” for the digitalisation of the economy (Panetta, 2021). Eventually, they will thus respond to the digitalisation of the economy and the central role of data and its valuation in the economy, which is fully expressed in the monetary system. In doing so, as the BIS (Bank of International Settlements) points out, they are providing themselves with the means to improve the current payment system (BIS, 2021b), starting with ensuring its integrity, but also the inclusiveness and efficiency of payments, and the protection of competition.

The IMF has highlighted the main characteristics of CBDM in the digital currency universe. A distinction must be made between wholesale CBDM, which is reserved for transactions between financial institutions, and retail CBDM, which can be used by all agents.

Wholesale CBDM would drastically reduce the costs of securities transactions, which involve many players for the validity and security of the exchanges which requires lengthy timeframes. Furthermore, the money that is exchanged is not guaranteed by the central bank. Wholesale CBDM would remove this issue, provided that digital money is issued on a permissioned blockchain that would record the flows of securities and money by cutting out many intermediaries, since verification and security protocols are contained within the computer codes.

Retail CBDM is a legal tender for domestic use. It ensures equal access to means of payment for citizens. It includes two features:

- transferable tokens in payments (digital cash) that consumers can store in digital wallets. This payment method benefits from instant settlement of payments and if required, full anonymity;
  - accounts with payments by transfers to and from the central bank.
- This method can lead to disintermediation risks for commercial banks that rise in times of financial stress. But, at the same time, if CBDM improves financial inclusion and, if it eliminates traditional cash altogether, it can strengthen the transmission of monetary policy by eliminating the zero-interest rate barrier in downward business cycles, thus providing a new instrument for monetary policy.

CBDM could counter the domination of private monopolies over payment systems, if cash were to disappear. But then two conditions

would have to be met. Firstly, consumer data should be protected; secondly, Bigtechs should also be subject to regulation, to avoid unfair competition with banks, but also to preserve monetary sovereignty.

What are the consequences for banks, financial stability and monetary policy?

Overall, the economic consequences of CBDCs can be grouped into three main themes: the effects of their issuance on banks (especially lending), their implications for financial stability, and their use as a new tool for monetary policy. BIS (2021b) provides a comprehensive review of the relevant literature on this topic.

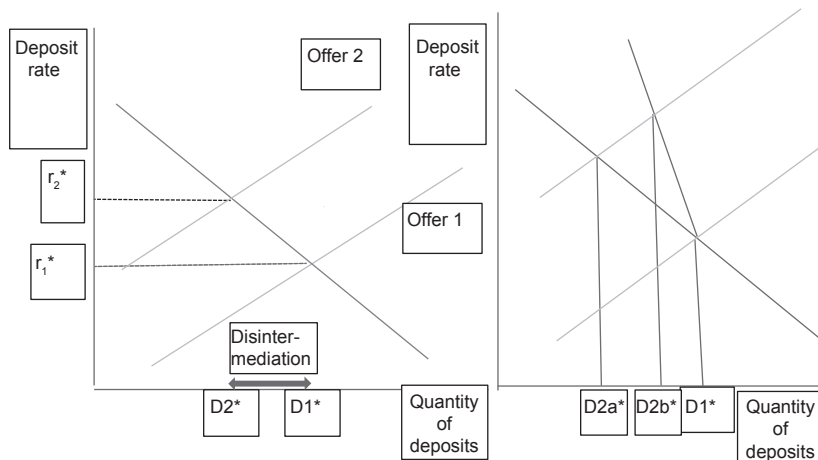
The issuance of interest-bearing CBDMs is an alternative to deposits in commercial banks. As deposit rates compete directly with the CBDM rate, a large replacement of bank deposits would make the transmission of monetary policy through interest rates more direct.

However, this change in the structure of the payment system may force commercial banks to increase their credit spreads to preserve their profitability, as they would have to seek funds on the wholesale markets and offer term deposits to limit the reduction in the size of their balance sheets resulting from the loss of their demand deposits (see Figure below). But this constraint on banks can cause a risk of financial instability through the rush to the central bank in case of mimetic behaviour of depositors. This risk would be increased in a situation of financial vulnerability that could lead to a systemic crisis.

Figure (below) describes the scenario of disintermediation in normal times, up to a limit that depends on the banks' strategy to restructure their balance sheets. The second is the risk of massive outflows in times of financial stress which would in the realm of a liquidity crisis hitting banks. Deposit insurance remains the best method to contain it. It can be complemented by regulation to ensure the continued robustness of bank balance sheets. Indeed, banks may feel their model is under threat and oppose the attractiveness of CBDMs to maintain the stability of their resources. They may have an interest in CBDMs not being interest-bearing. They may also seek to have CBDM deposits registered in bank accounts, legitimised by their expertise in providing credit.

In contrast, there is a radical solution which is to get out of fractional-reserve banking, this would represent a complete mutation of the payment system for the 21<sup>st</sup> century. Commercial banks would turn into mutual funds with liabilities consisting of more equity and bond debt instead of deposits (right hand side of Figure below). Only narrow banks, i.e. with assets consisting entirely of safe government securities would continue to issue money.

**Figure**  
**Impact of Disintermediation Due to CBDM**  
**on Interest Rates of Banks' Liabilities**



(1) Without CBDM. (2) With CBDM.

Source: authors.

*RESTRUCTURING THE INTERNATIONAL MONETARY  
 SYSTEM TOWARDS A MULTILATERAL SYSTEM  
 OF INSTITUTIONALISED COOPERATION*

The digitalisation of money represents a huge opportunity to reform the international monetary system. The international benefits of CBDC adoption by sovereign money issuers have been highlighted by, among others, the IMF (Adrian, 2021). But more generally, there is a concern that if the CBDM intensifies cross-border retail payment services, there will be increased currency substitution for tax evasion, leading to exchange rate volatility at the expense of financial stability. But these risks are part of the key currency system. The reason for this is the Triffin dilemma inherent in the key currency: the supply of dollars depends only on domestic US economic policy objectives; they have no reason to match the global need for dollar liquidity. Currency and related financial crises are recurrent and mostly concentrated in emerging and developing countries that do not benefit from expedients (convertible currency swaps) to mitigate these crises.

Can CBDMs, based on digital identities and operationalised as interest-bearing accounts, eliminate these risks? In its *Annual Report 2021* (Chapter 3), the BIS notes that CBDM has very different attributes from traditional central bank liquidity. Indeed, central banks retain cross-border control over the money they issue. They may

restrict non-residents' access to their money for authorised transactions. This reduces the risk of volatile capital flows and thus erratic currency substitutions.

However, international monetary cooperation is essential for the organisation of multi-currency trade. This is because digital identities must be transferred outside the countries issuing the CBDMs. How would this be possible if the regulations protecting data are different? An international agreement to share digital identities is essential to add an international dimension into the organisation of a CBDM system. This is because participating monetary sovereigns must be able to recognise each other's digital identities.

Mark Carney followed this thought process. In a notable speech at the Fed's Jackson Hole symposium in August 2019, he alluded to a new form synthetic global currency that he calls "hegemonic", based on a basket of central bank digital currencies, implemented through a network of these central banks.

Such a global synthetic currency would significantly reduce the influence of the US dollar on international payments. Through the diversity of participating CBDMs it would reduce exchange rate fluctuations for the large number of countries without currencies participating in the basket. By reducing the influence of the US over the global financial cycle, this system would reduce the volatility of capital flows experienced by emerging and developing countries. The currencies in the basket would become components of a global safe asset, encouraging emerging countries to diversify into safe assets beyond the dollar.

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### *The promotion of SDRs in a symmetrical IMS*

The alternative and more compatible solution to the need for a universal monetary level to address environmental issues is the promotion of special drawing rights (SDRs). This is because SDRs form ultimate liquidity that is not the *quid pro quo* of a country's debt. The promotion of SDRs is 'natural' and with it the restoration of the monetary role of the IMF, which was captured by the US Treasury at the beginning of Bretton Woods and continued after its demise as a key currency with degenerate hegemony, the consequence of which has been financial instability.

The symmetry of balance of payments adjustments, which Marc Carney seeks in his synthetic basket of CBDMs, would be more simply achieved by the issuance of digital SDRs, into which all major currencies would be convertible, and which would be a fiat currency with flexible supply.

There is no technical obstacle to making SDRs the reserve assets of a symmetrical multi-currency IMS because SDRs are an international standard by construction. To make SDRs the ultimate global reserve assets, countercyclical allocations would be needed. The transfer of SDRs should become the sole financing mechanism of the Fund.

Apart from flexible counter-cyclical adjustments to regulate the global economy, which the IMF would steer under the guidance of its Executive Board, there would be another role to perform. That of international lender of last resort. Only a multilateral and self-financed lender-of-last-resort mechanism by the IMF through an *ex-nihilo* creation of SDRs can be effective. It would put the IMF as international lender of last resort in the same position as central banks as national lenders of last resort.

This seemingly radical reform can be established gradually by building on what already exists. By its very definition, SDRs distribute the international constraint more equitably by spreading the “exorbitant privilege” of the issuer over all the currencies in the basket. This argues for a gradual reform of quotas, to correct the undue advantage of Western countries. The more the basket reflects the composition of world GDP, the less the Triffin dilemma will destabilise international liquidity.

The IMF can do much to promote SDRs by placing its entire accounting on a SDR basis; this amounts to blending the Fund’s general resources account and the SDR department account; this would make the SDR the official international unit of account for all international public contracts.

Finally, poor countries urgently need currency to cover vital imports and necessary expenditures on key political and economic priorities. However, a general allocation, even a large one, is not adequate if it is distributed according to quotas. To address the emergency, unused SDRs of advanced countries could be deposited in a dedicated Fund by collective decision of the G20 to buy bonds issued by multilateral development banks. The latter would finance priority investments in developing countries in accordance with a global human ethics purpose.

The IMF still must become this international lender of last resort. By establishing monetary multilateralism, the IMF would become the source of collective insurance that its Articles of Agreement had given it and which it had never been able to exercise.

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# THE SOCIETAL RESPONSIBILITY OF CENTRAL BANKS

LAURENCE SCIALOM\*

Central banks, and particularly the ECB (European Central Bank), have been constantly criticized since the financial crisis by NGOs (non-governmental organizations), think tanks, and other representatives of civil society for the effects their policies produce in areas that, in principle, do not directly come within the purview of their mandate. Whether it be the redistributive effects of unconventional monetary policies and their impact on wealth inequalities and also financial stability, the differentiated impact of monetary policy on access to jobs according to ethnicity in the United States, the principle of market neutrality seen as an obstacle to the ecological transition, or warding off a sovereign debt crisis in the Eurozone by eliminating the spreads between sovereign bonds, the common denominator of all these subjects is their major impact on socio-economic systems. Hence the need to question the societal responsibility of central banks. And yet, a quick internet search is edifying – this question is completely invisible. The concept does not exist! Or, at least, it is not formulated as such. The only major exception: on May 21, 2021, Isabel Schnabel, a member of the ECB’s Executive Board, gave a speech entitled “Societal responsibility and central bank independence”.<sup>1</sup> In it, she noted that, “heated public debates about the broader distributional and societal consequences of unconventional policy measures are testimony to the looming distrust facing central banks today”. However, as the title of this speech points out, this call for societal responsibility is all the more sensitive and delicate to manage because central banks are independent institutions.

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The societal responsibility of central banks echoes the social responsibility of companies. So why not use the same adjective? Corporate social responsibility is directly tied to the partnership approach of the company, “partners” being those towards whom the company must be responsible. Here the difference in terms expresses the fact that central banks are responsible to society as a whole. This does not mean that central banks don’t also have a social responsibility, but that term does not encompass the same expectations as does their societal responsibility. The social responsibility of central banks refers to the way in which the institution deals internally with social issues, parity, ethics, etc. In that case, the evaluation grid is very similar to the one companies may employ. Societal responsibility on the other hand refers to the fact that the central bank manages the currency, a fundamental institution of our socio-economic systems, which immediately places its responsibility at the level of the payment community as a whole.

We shall first attempt to comprehend the forces that are working to undermine the myth of a central bank solely dedicated to preserving the value of the currency and disconnected from major societal stakes and debates. Then we will examine the growing gap between the *de facto* and *de jure* societal responsibilities of central banks since the financial crisis of 2007-2008. We will illustrate this trend towards resetting central bank policy by taking up two heavily debated questions – the effects of monetary policy on inequality and the role of central banks in the ecological transition. Finally, we will indicate the questions that remain unanswered regarding the societal responsibility of central banks.

*THE CRUMBLING OF THE MYTH OF SOCIETAL  
RESPONSIBILITY LIMITED TO PRESERVING THE VALUE  
OF THE CURRENCY*

The institutional form of central bank independence, which became widespread beginning in the 1980s in most of the so-called advanced economies and in many emerging countries, was based on the idea of depoliticizing central banks as a way of lending credibility to the anti-inflationary orientation of monetary policies. Institutionalizing the severing of the tie between governments and the institution in charge of monetary policy was aimed at combating the supposed propensity of governments before elections to pursue too flexible a monetary policy in order to support economic activity and employment – and thus favor their re-election – at the cost of depreciating the currency’s value and thus of higher inflation. In economic terms, delegating monetary policy to a conservative central bank (in the sense



of being more anti-inflationary than society, Rogoff, 1985) removes the inflationary bias associated with time inconsistency inherent in monetary policy (Kydland and Prescott, 1977; Barro and Gordon, 1983). The latter is thus seen as a purely technical field that can be delegated to experts entirely lacking in political motivation. This stated “depoliticization” of the currency and of the institution that manages it is reinforced in the Eurozone by the space within which the European currency circulates not coinciding with the space within which a government exercises its sovereignty. The link between currency and sovereign government is weakened because the euro is not backed by a federal budget.

In this very narrow and technicist conception of currency and monetary policy, the societal responsibility of the central bank, even if this formulation was never deemed appropriate, was *de facto* limited to respecting the mandate it had been given, namely, in many countries preserving the value of the currency and thus keeping inflation low and stable. So the assumption was that all of society benefits from price stability – whether debtor or creditor and whatever the social category – contrary to inflation, which was thought to have redistributive effects according to the differentiated capacities of the various economic protagonists to correspondingly increase their revenue. Moreover, most economists thought that financial stability was as good as encapsulated in price stability, which was so-to-speak bundled together with financial stability. In retrospect, this conjecture proved to be wrong. The so-called “great moderation” period from the mid-1980s to the great financial crisis of 2007-2008, marked by low inflation and reduced volatility in both inflation and the business cycle, instead encouraged excessive risk-taking by financial intermediaries, especially banks, without central banks reacting to the excesses of debt and structured financing. From the beginning of the financial crisis, the response of central banks was to reclaim their historical function of lender of last resort and even to go beyond that by becoming the actual market makers of last resort. Central banks saved the global financial system by injecting considerable amounts of liquidity beginning in August 2007 and by substituting for the interbank market, which had been frozen by banks’ distrust of each other. It is not so much the bailout that raises questions about the societal responsibility of central banks, but in fact rather not having seen coming the abuses of finance that led to such a serious financial crisis.

It is precisely at this point in time that legitimate questions about the societal responsibility of central banks took root. Central banks were perceived as a kind of firefighting arsonist who had contributed to

creating a macroeconomic context conducive to considerable excess private debt and therefore financial instability. Constricted by their narrow mandate to preserve the value of the currency and trapped in a very pro-market doctrine that dictated their actions, they did not react to the accumulation of financial fragilities in balance sheets, although they assumed the role of savior when the financial crisis broke out. While managing the financial crisis, central banks acted *de facto* in concert with governments to save banks from their excesses. After such an episode, it is hard to continue to view monetary management as simply technical and depoliticized.

All the more so that the following years were marked by revelations of financial scandals of all kinds: the Abacus affair, the Libor, Euribor, and Tibor scandals, which François Morin correctly describes as “organized crime pacts” (Morin, 2015), Ponzi schemes, toxic municipal debts, mortgage fraud, bank involvement in large-scale tax evasion schemes, etc. The list seemed endless. Society thus saw finance only through the prism of its perversions. Expressing popular sentiment, finance in movies is a world of greed, conniving, and conflicts of interest, a world in which profits are privatized and losses mutualized, “heads I win, tails you lose”.<sup>2</sup> And central banks are perceived as having been an unwilling part of this environment of generalized moral hazard.

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*AN UNTENABLE GAP BETWEEN DE JURE  
AND DE FACTO SOCIETAL RESPONSIBILITY*

Everyone has the feeling that since 2007 economic and social life has been ruled by a succession of crises (financial, sovereign debt, health, and ecological). This context has made “visible” what the period of great moderation had concealed: managing the currency is not a purely technical and depoliticized matter. Central banks are key players in world “affairs” and not mere independent agencies oblivious to social needs. Moreover, a glance at history suffices to reject the notion that central banks are institutions immune to the convulsions inherent in crises, wars, and geopolitical tensions.

The first central banks in Europe gave governments financial benefits and assumed the responsibility for managing the public debt.<sup>3</sup> This primary role was often combined with another key role – unifying the issuance and circulation of money, centralizing and managing the country’s metal reserves, and thereby improving and fluidifying the payment system. After having been relegated to the back burner, the role of managing public debt was revived in the twentieth century during periods of war and even beyond. Central banking regimes have

therefore continually evolved over the course of history. Goodhart (2010) identifies three stable central banking regimes interrupted by less well-defined times:

- the period he calls the Victorian era, beginning around 1840 and ending in 1914;
- the period of strong government control from the 1930s to the late 1960s;
- and then the era of triumphant markets from the 1980s to 2007.

Despite very different monetary regimes – gold standard in the first period and inflation targeting in the third one – these two periods were characterized by strong confidence in market mechanisms and by central banks that were relatively independent of governments.

After the monetary turmoil of the post-World War I period, however, the end of the gold standard, the Great Depression, and the deflation of the 1930s led to a central banking regime in which central banks found themselves in a position of relative subordination to governments that were more intrusive and authoritarian towards banks and finance. The retaking of control was justified by the fact that part of public opinion suspected central banks of being beholden to the interests of private financiers and of neglecting the public interest (Crockett, 2003). Governments gained the upper hand over central banks fairly rapidly, and in many countries this took the form of nationalizing the central bank (Singleton, 2010; Blancheton, 2016). The public central bank model then spread throughout Europe and the rest of the world in the 1940s.

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This periodization suggests that since the financial crisis and the great recession we have entered a transitional period towards a new central banking regime in which central banks will again ground their policy in publicly debated questions.

The financial crisis has unveiled, in the literal sense of having lifted the veil, the absence of neutrality in how central banks, including the most independent ones, manage the currency. This is especially the case of the ECB. There is a discrepancy between the *de jure* societal responsibility imposed by an often narrow mandate that boils down to ensuring a stable monetary environment and the established reality of a greater *de facto* societal responsibility. The fact that this discrepancy is now being highlighted lies behind increasing demands from the public that this state of affairs at last be recognized.

Indeed, since the crisis of 2007-2008, episodes have increased in which central banks and especially the ECB have taken on a role viewed as having a major socio-economic impact. Wasn't it Mario Draghi's "whatever it takes" that saved the euro while member states kept

hesitating on how to act? From this point of view, hasn't the ECB *de facto* taken on societal, and even political, responsibilities, overstepping its narrow responsibility of preserving the value of the currency? When the ECB "closes" the spreads between member states' sovereign debt rates, thereby averting the specter of a new sovereign debt crisis, isn't it *de facto* resuming its historical role of managing public debt?

This collective realization of the fact that central bank powers extend far beyond their official mandate has fueled the many calls from civil society for them to more directly mobilize their capacity for action benefitting the common good.

### *THE RECOGNITION BY CENTRAL BANKS OF THE REDISTRIBUTIVE EFFECTS OF MONETARY POLICY*

In the United States, the pandemic has revived a debate on the role of the US central bank in relation to racial inequalities in access to jobs. The Fed's dual mandate is rooted in the US social movement for equal rights. After having won civil rights, Martin Luther King's ambition was to broaden out his activities to the issues of inequality and full employment. Upon his assassination, his widow Coretta Scott King took up the cause, co-founding the National Committee for Full Employment, which played a key role in the discussions leading up to the Humphrey-Hawkins Act of 1978 establishing the Fed's dual mandate – controlling inflation, but also aiming for maximum employment. This second goal quickly took a back seat in the context of high inflation, which led to the appointment of Paul Volker as head of the Fed in 1979. But it enjoyed a return to favor during the Great Recession and the financial crisis of 2008, when the Fed chose to support the economy until the unemployment rate dropped to 3.5% (to 5.4% for African-Americans) at the end of 2019, the lowest level in forty years (Goetzmann, 2020). Since the pandemic and lockdowns effaced this result, the issue has returned with a vengeance. Consequently, in July 2020 Jerome Powell admitted to paying a lot of attention to the unemployment rate for all categories of the population, while deeming that the central bank did not have the tools to fight against racial inequalities, which require budgetary tools. Nevertheless, one month later, in a speech at the Jackson Hole Symposium, he announced that the Fed would give more weight to its mission to promote employment for low-income families, the ones most affected by the pandemic. This is one of the major reasons given for revising the US central bank doctrine, according to which the goal of price stability from now on means a rate of inflation close to an average 2% in the medium or long term. Accordingly, actual inflation may remain above this target for some time, as long as that compensates for an earlier

period when inflation was below the target. The goal of full employment – including for the African-American and Hispanic minorities – is thus once again becoming a priority, which is reflected in the fact that the Fed is monitoring new indicators to adjust its monetary policy, including the unemployment rate of African-Americans and wage growth for the lowest-paid workers.

The growing attention paid to the effects of monetary policy on inequality is not exclusive to the Fed. The issue is also beginning to be discussed at the ECB. This is evidenced by Isabel Schnabel's speech on November 9, 2021, entitled "Monetary Policy and Inequality".<sup>4</sup> Noting that the pandemic has exacerbated the perception of growing inequality, she argues that, "central banks are no longer considered bystanders in this discussion. The use of asset purchases, in particular, has triggered concerns that monetary policy may raise economic inequality by favoring those who own financial assets". According to Isabel Schnabel, this diagnosis must be qualified. Noting that lower-income workers are also more exposed on average than higher-income workers to the risk of job loss in a recession, she concludes that the positive effect of expansionary monetary policy, through its effect on GDP growth, benefits mainly the lowest-income social groups. In the last analysis, according to Schnabel, the response of central banks to the financial crisis of 2007-2009 therefore protected above all the most vulnerable and underprivileged members of society.

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### *URGENT CALLS FOR GREENER MONETARY POLICY*

Central banks have also been subject to pressure and demands from civil society regarding their inaction on the climate front. The pressure to act can be explained by the vicious circle linking finance and climate. By providing inexpensive and abundant financing, whose risks are inadequately assessed, to companies involved in fossil fuel research, exploration, and production, financial institutions make climate change possible and even accelerate it. Moreover, climate change is a major factor of financial instability. The real goal of the ecological transition is to drastically reduce our GHG (greenhouse gas) emissions below a critical threshold, called the planet's carbon budget. This is the maximum amount of hydrocarbons that can still be burned while remaining below the +1.5 °C warming threshold. In order to respect a carbon budget of +1.5 °C with a 50% probability by 2050, nearly 60% of fossil oil and methane (the main component of natural gas) and 90% of coal must not be extracted (Welsby *et al.*, 2021). Some of these reserves that cannot be burned have already been prospected and already figure on mining industry balance sheets. The stranding of these fossil-based assets is therefore unavoidable, even if it is hard to

know precisely when that will happen. However, strictly speaking, markets and financial intermediaries are incapable of functioning under the obligation of respecting the carbon budget. Pure financial analysis leads to judging investment projects and choosing between them on the basis of criteria that remain totally impervious to global warming and more generally to any degradation of ecosystems. Finance allocates financial flows according to the expected risk/return ratio, which does not take into account the negative externalities of brown investments (over-investing due to the underestimation of the risk of stranding), nor the positive externalities of green investments (under-investment in relation to what would be socially optimal). Consequently, the only way to bring about a reallocation of financial flows in favor of sustainable and ecologically tenable investments is strong intervention by public authorities, regulators, and central banks to modify the expected risk/return ratio in favor of “green” investments, to the detriment of carbon-related investments. By adapting their instruments, central banks have the means to bring pressure to bear on market mechanisms and break the vicious circle by encouraging the reallocation of financial flows and the revaluation of financial climate risks. This explains why they are being called out on this question.

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However, taking on this responsibility remains a sensitive issue, because global warming creates a situation of radical uncertainty. Statistical tools here become ineffective since past patterns can no longer guide our actions. Yet our economic systems are founded on governance that is based on quantification, especially of the cost-benefit ratio of economic policy measures. Making decisions in a situation of radical uncertainty implies accepting innovative methodologies that are more forward-looking, more qualitative, and more analytical, abandoning probabilistic approaches. The difficulty of discarding the dogma of precise and systematic quantification as a justification for public action creates a “bias in favor of inaction”. One is struck by this when reading reports from the NGFS (Network for Greening the Financial System), whose analysis is very clear-sighted but which, despite recognizing the urgency of acting, continue to call for more research on the grounds for action. They recognize nevertheless that, by definition, this quest for the Holy Grail cannot succeed in a situation of radical uncertainty. Yet we know that the least tenth of a degree counts in our collective fight against global warming. Hence the demands from civil society on central banks, which have several levers at their disposal for greening their monetary and macroprudential policies as long as they accept a paradigm shift in the motives behind their actions. Without claiming this list to be exhaustive, central banks

could green their collateral policy, require “green” prerequisites for privileged access to liquidity, green QE (quantitative easing), coordinate with public investment banks to support investment plans for the ecological transition, and even monetize public debt in order to create room in the budget to ensure economies make the ecological shift. They don’t do this, or do very little of it, in the so-called advanced countries. The bias in favor of inaction is reinforced by their independent status and the lack of democratic legitimacy for climate action behind which they hide. And yet arguments such as systemic financial risks due to climate change and the impact of global warming on inflation plead in favor of central bank action.

### *PROGRESS, BUT MORE NEEDS TO BE DONE*

The focus put on the redistributive effects of monetary policy and the role of central banks in the ecological transition should not overshadow the fact that the institutional framework in which they forge their doctrine and their monetary policy has a major influence on the way they respond to their societal responsibility. It is particularly important to look at the players with whom they have formed regular and institutionalized contacts and who are therefore likely to influence the way they exercise their societal responsibility. As part of its strategic reviews, the ECB has thus displayed a desire for transparency and has organized “unfiltered” exchanges with NGOs (Positive Money, Finance Watch, Greenpeace, and so on), which have sometimes challenged its positions in a fundamental way (ECB Listens, 21 October 2020).<sup>5</sup> It has also circulated a questionnaire making it possible for European citizens to comment on its actions.<sup>6</sup> The transcription of responses by participants has been remarkably transparent, both with regard to the answers on inequality (question on secondary goals) and those on the climate. This more “open” approach to society’s expectations is in line with the ECB’s societal responsibility. This commendable effort during the strategic review exercise should nevertheless not serve to obscure the fact that much less “evenly balanced” channels of influence continue to be quite active. For example, in October 2017, the Corporate Europe Observatory published a report revealing the composition of the ECB’s advisory committees (CEO, 2017). On the date of the report, it noted the existence of 22 advisory committees comprised of 517 members, among which 508 were representatives of the private financial sector (banks, asset managers, clearing houses, financial advisers, and so on). Within these committees, European systemic banks were overrepresented, with 208 seats out of the 508 cornered by the finance industry. This quite lopsided composition of the ECB’s advisory committees, systematically favoring financial ope

rators, contravenes its societal responsibility because it does not reflect the diversity of interests. Since the selection of these committees is rarely based on open calls for candidates, the ECB engages its societal responsibility by not opening up the deliberative bodies of the ecosystem that influences its decisions.

### CONCLUSION

As Monnet (2021) rightly reminds us, “central banks as we know them today (i.e. public institutions, not subject to the profit motives of private shareholders) were born at the same time as the welfare state, and with similar goals, at the end of the Second World War (p. 9)” and, “as a ‘welfare bank’, the central bank must be made part of democratic debates and institutions, and not be a purely technical manager dealing with subjects isolated from the rest of economic and social policy (p. 8)”. The embedding of the central bank in the welfare state system has been masked by the illusion of currency neutrality and the purely technical way it has been managed, illusion which dominated the central banking model that had become the norm before the financial crisis. The current animated debates on the various aspects of the societal responsibility of central banks explicitly revive the notion of a central bank anchored in society, protecting against the excesses and failures of the financial markets, reducing uncertainty and coordinating with governments in order to ensure a stable macroeconomic and macrofinancial framework.

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### NOTES

1. See the website: <https://www.bis.org/review/r210528e.pdf>.
2. See fictional accounts, such as “Margin Call”, “The Wolf of Wall Street”, or “The Big Short”, a fictional documentary, as is “Cleveland vs. Wall Street”, or the incisive documentary “Inside Job”, which begins by saying, “The 2008 meltdown was avoidable.”
3. The first central bank, the Riksbank, was founded in 1668 to finance the Swedish government’s wartime expenses. As for the Bank of England, it was created in 1694 to facilitate financing the public debt created by the war led by William III against James II and Louis XIV.
4. See the website [https://www.ecb.europa.eu/press/key/date/2021/html/ecb.sp211109\\_2-cca25b0a68.en.html](https://www.ecb.europa.eu/press/key/date/2021/html/ecb.sp211109_2-cca25b0a68.en.html).
5. See the website <https://www.youtube.com/watch?v=GclTry1FGIA>.
6. See the website <https://www.ecb.europa.eu/home/search/review/html/ecb.strategyreview002.en.html>.



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THE EUROPEAN CENTRAL BANK:  
WHAT ACCOUNTABILITY TO  
THE EUROPEAN PARLIAMENT,  
COROLLARY OF ITS INDEPENDENCE  
IN ORDER TO ASSURE ITS CREDIBILITY  
AND ITS LEGITIMACY?

PERVENCHE BERÈS\*

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**T**he credibility and legitimacy of an independent central bank is based on the conditions under which it exercises its responsibilities. In the case of the European Central Bank (ECB), the Maastricht Treaty of 1992 explicitly decided it would be accountable to the European Parliament and, through the Parliament, a directly elected institution, would address the citizens. Other criteria may exist in function of the results of a central bank's actions and how the markets evaluate them. Other models may be prevalent, such as that of the Bundesbank, whose accountability is based on the support of public opinion, but they were ruled out by those who wrote the treaty, who in their wisdom must have correctly thought that they were not appropriate in this case.

This responsibility of the European Parliament on accountability of the ECB forces both institutions, in the spirit of the treaty and in their mutual interest, to rigorously examine the quality of the relations they maintain and to adapt them to changes in doctrines and

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practices. This is an institutional and democratic challenge. It is this special relationship, which is necessarily dynamic, that this article will analyze.

*THE EUROPEAN PARLIAMENT FACED WITH  
THE EXPANSION OF THE ECB'S TASKS AND  
THE INCREASING IMPORTANCE OF ITS NEW DOCTRINES*

From the outset, the European Parliament has sought to promote a dynamic interpretation of the relationship between Article 127.1 of the Treaty on the Functioning of the European Union (TFEU)<sup>1</sup> and Article 3 (Article 2 in 1998)<sup>2</sup> of the Treaty on European Union (TEU), which “notes that central bank monetary policy decisions influence real economic variables such as investment, employment and growth” (paragraph 3) (European Parliament, 1998), and “considers it necessary, in the interest of transparency and credibility, for the ESCB to make clear how monetary policy is intended, as long as the objective of price stability is maintained, to contribute to a balanced and appropriate policy mix, with a view to promoting sustainable growth and employment” (paragraph 13) (European Parliament, 1999b).

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Subsequently, its Committee on Economic and Monetary Affairs (ECON) chose, for example, “the number of objectives of the European Central Bank and how to define the hierarchy between them” to be one of two topics for a monetary dialogue (European Parliament, 2006).

On the ECB side, the initial interpretation of Article 127.1 of the TFEU by Wim Duisenberg, its first president, was restrictive. “It is our belief that the best contribution that monetary policy can make to promote economic growth and employment is to create a climate of price stability.” (European Parliament, 1999a).

In speech, even after 2007 and a notable change in the intervention conditions of monetary policy, Jean-Claude Trichet maintained steadfastly that “price stability contributes substantially to the achievement of broader economic goals, such as higher standards of living, high and more stable levels of economic activity and employment” (ECB, 2009).

His successor, Mario Draghi, took a significant step forward with his “whatever it takes” (Draghi, 2012), while justifying a new approach. “When there are no risks to price stability, but unemployment is high and social cohesion at threat, pressure on the central bank to respond invariably increases.” (Draghi, 2014).

Already in her audition as a candidate for the presidency of the ECB, Christine Lagarde went further and promised to make the fight against

climate change a macroeconomic priority of the ECB (European Parliament, 2019b), even before the European Commission had been appointed and had proposed the Green New Deal. She reiterated this during her first intervention in the monetary dialogue. “The European Central Bank also has a mandate that is defined not as primary, but as secondary, and which includes, in particular, all economic policy decisions taken by European institutions. Therefore, and by extension, one could perfectly well consider climate change as one of the components of the mandate – secondary, indeed, but part of the mandate of the European Central Bank.” “In our macroeconomic analysis, we need to include [...] climate change [ ; ] in our supervision of banks we also have to include climate change, [...] clearly the transparency of disclosure, the assessment of risk have to be part and parcel of the supervision that is conducted by the supervisory authorities, including the Single Supervisory Mechanism (SSM).” (European Parliament, 2019c).

She also recognized the contribution of the European Parliament (European Parliament, 2018b) in defining the importance of this objective. “As part of the secondary objectives, we obviously have the economic development, we have the respect for the environment and the fight against climate change, and so on and so forth. Clearly, those have to be taken into account, particularly if those secondary objectives are stated very clearly by the other institutions, and in particular by the European Parliament.” While reiterating that, “we strongly and consistently emphasize that the ECB can only act upon its secondary objectives if this does not prejudice or conflict with the objective of price stability” (European Parliament, 2021b).

The ECB President theorized this evolution in the interpretation of Article 127.1 of the TFEU by referring to the “realist movement” born in the US legal scholarship and recently embodied by Supreme Court Justice Ruth Bader Ginsburg. “Particularly effective are those changes which take place in continuity. One particular case is that of the law, which can be interpreted in a way that makes sense and adapts to societal changes, while remaining coherent with the fundamental principles of the legal system.” (Lagarde, 2021).

In reality, from 2007 onwards and as crises have unfolded, both the ECB’s positions and even more the policies it has pursued have evolved. New doctrines have been established. Concerning the relation between Article 3 of the TEU and Article 127.1 of the TFEU, the vagueness made it possible to interpret the mandate narrowly, which for a time enabled the ECB not to deal with it and protected the central bank. But a broad interpretation has now been accepted; it raises the question of setting up structured dialogue with the European Parliament.

Article 127.1 provides for an initial prioritization, since it refers to “the ESCB shall support the general economic policies in the Union”, whereas Article 3 does not use this expression but instead details a long list of objectives. Where and by whom are these “general economic policies in the Union” defined?

In addition to its central role on monetary policy, for which the ECB is developing unconventional policy, it has been given explicit responsibility for financial stability through the creation in 2010 of the European Systemic Risk Board (ESRB) and for banking supervision with the creation in 2014 of the Single Supervisory Mechanism (SSM) on the basis of paragraphs 5 and 6 of Article 127 of the TFEU;<sup>3</sup> it has also progressively adapted its policy to the secondary objectives that Article 127.1 of the TFEU asks it to support.

This is all the more significant within the European Union, as the absence – given the lack of political agreement – of macroeconomic management and counter-cyclical intervention tools for the Euro area has largely paralyzed the economic pillar of the Economic and Monetary Union (EMU), placing the ECB, a federal institution, in the front lines to act and take its responsibilities. It has done so since 2007, throughout the great financial and sovereign debt crises. Governments have been happy to not have to take action, having found it so hard to reach agreements among themselves. The ECB was also the first to act in the face of the Covid-19 pandemic crisis.

But this evolving doctrine has not been without debate inside and outside the institution between “hawks” and “doves” – there have been questions and confrontations about what it covers and the impact of its implementation.

“Independent central banks, pivotal actors in macroprudential policy, are naturally involved with decisions that influence the allocation or redistribution of income and wealth, which leads to possible conflicts of purpose and raises a question of legitimacy. This may be the case, for example, of measures concerning household debt, the housing market, and taxation of savings.” (Jaillet, 2019). “With monetary policy having replaced fiscal policy as the key policy tool to stimulate growth, might the old dogma (of independence) be outdated?” (Kotz, 2016).

Eric Monnet suggests a way out of this quandary by using a new interpretation to shed light on central bank independence. “The central bank cannot be viewed independently from the welfare state.” “The reaction of central banks to the 2008 crisis sounded [...] like a (belated) reminder of the major, abrupt change that these institutions experienced following the Great Depression and the Second World War,

i.e. their integration into a state apparatus whose goal was to offer individuals protection against crises.” Fundamentally, this change raises the question of the parallel change concerning democratic accountability. “It is not up to (the central bank) to decide alone and independently how finance should function in the economy.” (Monnet, 2021). “From time immemorial, democracies have instituted autonomous bodies whose purpose is to curb the flood of political passions; from time immemorial, the question has been how to ensure that these guardians, who are supposed to improve the functioning of democracy, do not misuse power for their own ends, at the citizens’ expense.” (Magnet, 2000).

### *THE NEED TO REASSESS DEMOCRATIC ACCOUNTABILITY*

#### *The original tools have improved over time*

The framework of reference is defined by Article 284.3 of the TFEU, which was introduced by the Maastricht Treaty and has remained unchanged since then.<sup>4</sup> It has been on this basis that the European Parliament has formalized its role (European Parliament, 1998). This has been the fruit of prior exchanges, formal or otherwise, instigated beginning in 1994 with the presidents of the European Monetary Institute (EMI), Alexandre Lamfalussy and Wim Duisenberg – an intermediary stage before the creation of the ECB. A professional, pro-European spirit prevailed in these discussions, which took place between honest people driven by a common desire to create the best circumstances possible for the installation of the ECB so that it could succeed in its mission and the creation of the euro would be crowned with success. It is within this context that the concept of a “monetary dialogue” was introduced in order to ensure “transparency and credibility”. The terms “parliamentary control” and “hearings” were ruled out as possibly affecting the independence of the ECB.

The ECB places a lot of importance on this distinction. “I’m not sure that I am totally comfortable with the word ‘control’. I think that ‘accountability’ is the one that best describes – as provided for under the Treaties – the relationship that we have between us, between the European Parliament and the European Central Bank.”, stipulates Christine Lagarde (European Parliament, 2020a).

Accordingly, the ECB president appears before ECON four times a year under a predetermined schedule in order to avoid any risk of parliamentary interference with the decisions of the Governing Council. By comparison, the Fed participates in a hearing before Congress twice a year. This principle was strictly respected until September 11, 2007, when Jean-Claude Trichet participated in an

extraordinary monetary dialogue to explain the injection of 95 billion euro of liquidities on August 9. The monetary dialogue is no longer perceived as a risk for the independence of the institution but rather as a tool to justify and explain the ECB's monetary policy to the European Parliament and, through it, to the public, to European citizens. This initiative was repeated on August 29, 2011.

Parallel to the monetary dialogues should be mentioned numerous informal exchanges. They make it possible for all the members of the Executive Board to participate on an ad hoc basis in discussions with ECON on topics outside of monetary policy. They have significantly increased since the beginning of the current mandate of the European Parliament and the ECB, including in the form of the participation of members of the Executive Board in camera meetings of ECON coordinators, both on the strategic review and on launching a "central bank digital currency" (ECB, 2020).

From the outset, ECON has also set up expert panels composed of academics in order to help correct the asymmetric information that Members of the European Parliament (MEP) may face in relation to the ECB – their resources being in no way comparable to those of their counterparts in the United States. Beginning in February 2006, ECON coordinators have always selected two topics for these studies, which the ECB President is asked to address in his or her opening remarks in order to better focus the discussion. There have been proposals to improve the way these expert reports are used and to better plan out the dialogues according to the themes agreed upon; to make transcripts of the pre-2013 monetary dialogues available online; to turn the dialogues into real hearings; to better coordinate the questions; to not place the ECB President at the podium, as during nomination hearings or in the US Congress; to organize press conferences with the ECB President, ECON chair, and its coordinators after monetary dialogues; and to reduce the number of MEPs allowed to speak (Diessner and Jourdan, 2019). Along with this latter proposal is the proposal often made to create a Euro area subcommittee (Allemand and Martucci, 2014), which has been again envisaged in connection with the creation of a Euro area budget (European Parliament, 2017b). The history of the European Parliament and recent changes in the intervention mechanisms, notably the creation of the "Recovery and Resilience Facility" outside the perimeter of the Euro area, do not favor such a measure, and the departure of the British has not changed the terms of the discussion. A limited format may be proposed, but it should be open to all MEPs in order to have a chance of succeeding, as what in fact existed before the move to the third phase of the EMU.



Once a year, ECON also invites the Vice-President in charge of economic affairs to present the ECB's annual report, which is then debated in a plenary session in the presence of the President of the ECB, as provided for in the TFEU. Starting in 2016, in its annual reports the ECB has been making public its comments on the contribution made by the European Parliament through its resolution on the previous annual report (ECB, 2016). This had been a long-standing demand of the European Parliament (European Parliament, 2013, 2016).

Beyond these measures, ECON has developed the practice of organizing for a delegation to visit the ECB's headquarters in Frankfurt at least once a year. In addition, on the model of what exists for the Council and the Commission, the European Parliament has also developed a procedure permitting each MEP to ask the ECB up to six written questions per month (Rules of Procedure, Article 140). The questions' admissibility is examined by the ECON chair.

Concerning transparency, since 1998 the European Parliament has advocated repeatedly in its annual reports, "for the minutes of the ECB Governing Council meetings to be published in the form of summaries including the decisions taken and the reasoning behind them at the latest by the day after its next meeting, these summaries also to explain how the decisions are linked to and affect other policies; calls also for full, detailed minutes to be published at the latest five years after the meeting" (paragraph 15) (European Parliament, 1998). It was only with its meeting on January 22, 2015, that the ECB began publishing anonymized minutes of the Governing Council meetings. It did so at the same time it launched the quantitative easing (QE) program. This opening should be entirely credited to those who had been asking for it. To make more progress, the ECB should publish the same documents prior to 2015 and also allow access to the nominative minutes of its meetings, for a limited amount of time if necessary, in the secure ECON reading room.

On June 9, 2017, at the initiative of Ramon Tremosa, rapporteur on the ECB 2015 annual report, 44 MEPs asked the ECB President for transparency on the Corporate Sector Purchase Program (CSPP). He responded in a letter dated June 23, 2017, by promising to publish a list of holdings (Draghi, 2017). There, too, progress can be made by disclosing the names of the companies whose bonds are being bought, the detailed amount of the Eurosystem's holdings for each bond purchased, and aggregating all the data in a single user-friendly spreadsheet, or explaining in detail the rules under which the program operates.

Concerning the appointment of the members of the Executive Board, the European Parliament has an advisory role.<sup>5</sup> As soon as Wim Duisenberg was designated, the Parliament organized a hearing for the candidate – as it does for the members of the European Commission – independently of what is provided for in the TFEU. It asked “governments of the Member States not to appoint candidates that do not have the approval of the European Parliament” (European Parliament, 1998). And yet the Council ignored the rejection of Yves Mersch’s nomination and the “reservations” expressed by ECON on the nomination of Luis de Guindos (European Parliament, 2018a).<sup>6</sup> These disputed appointments raise the question of gender balance within the ECB and the role of the European Parliament in the process (European Parliament, 2017a, 2019a).

The absence of a woman on the Executive Board after the end of Gertrude Tumpel Gugerell’s term in May 2011 led the European Parliament to reject Yves Mersch’s nomination, leaving the position vacant for more than six months.... Since then, the Parliament has constantly raised this point (European Parliament, 2016, 2019) and it can be argued that this has influenced some appointments, whether to the ECB or to the SSM. In the future, in its advisory role, which is similar to that of the European Parliament, the ECB could also seek to exert a strategy of influence at the behest of its Executive Board. In the Council, the governments that champion the debate on the rule of law should state in advance the importance they attach to this issue before contemplating the use of qualified majority voting in the European Council.

But improving this balance also depends on the Member States, which appoint the majority of the members of the Governing Council according to their own procedures, and on their determination to implement Article 3 of the TEU, which stipulates that the Union shall promote “equality between women and men”. Neither the Parliament nor the ECB can give them directions on this question. Nevertheless, in the past the Governing Council has been able to exert moral pressure (see the resignation of Antonio Fazio, Governor of the Bank of Italy, in 2005). All other things being equal, one could imagine that, at the initiative of its Executive Board, and of its President who often speaks out on this issue (Lagarde, 2020), the Governing Council could also encourage Member States to appoint more women as governors of the national central banks.

On procedure – when Luis de Guindos was appointed in 2018, the European Parliament was able to convince the Council to present two candidates it then organized a hearing in camera before the Council made its recommendation. Little progress has been made since then,

although the European Parliament has obtained more powers on the appointment of the Chair, the Vice Chair of the SSM,<sup>7</sup> and the Chairs of the European supervisory authorities; this should encourage changes in how ECB appointments are made.<sup>8</sup> “The treaty should be modified for the European Parliament to have the right of approval on the appointment of the President and the members of the Executive Board of the ECB.” (Trichet, 2020). Without waiting for a hypothetical revision of the TFEU, which the maturity of the ECB would make possible, and in the spirit of what the European Parliament has advocated, there are proposals on the table to strengthen the conditions for exercising Parliament’s power (Transparency International, 2017; Diessner and Jourdan, 2019). For the next appointment in June 2026 to replace Luis de Guindos, the Council should submit a list of candidates to the European Parliament with an equal number of men and women and agree to commit in advance to a timetable making it possible for the European Parliament to make a decision under good conditions. It should commit to respecting the position adopted by the Parliament. One could also propose to bring together a panel, comprising MEPs who are members of ECON, along with academics and representatives of civil society, in order to submit proposals of candidates to the Council.

In this package, elaborated on the basis of the existing treaties, there remain two fundamental differences with the United States Congress – the European Parliament does not have the power to modify the statutes of the ECB and has only an advisory role when appointing members of the Executive Board. Nothing compels the ECB to listen to the European Parliament, which has no ability to sanction it. The ECB operates in an area, the Euro area, which has no juridical existence as such.

Gradual improvement of the system by pressing ahead with the democratic accountability of the ECB has made it possible to strengthen the dialogue between the European Parliament and the ECB, including with regard to the new roles and doctrines of the central bank, but the institutions have also had to change.

### *Taking into account the new roles and new institutions*

First of all, this concerns the recognition in 2010 of a financial system stability role (TFEU, Article 127.5) and the creation of the European Systemic Risk Board (ESRB) chaired by the President of the ECB, which had been advocated by the European Parliament as early as 2008 (European Parliament, 2008), even though the ECB had in fact been dealing with the question of stability without waiting for the Board to be created, and SSM regulation were to provide the ECB with

effective macroprudential missions and instruments. The European Parliament organizes a specific hearing at least once a year on the annual report of the ESRB just after a monetary dialogue and, since 2019, in conjunction with a specific discussion; in 2019, it was decided that “the President of the European Parliament or a representative of the European Parliament on topics related to Union law in the field of macroprudential policy may be invited to attend meetings of the General Board” and that warnings and recommendations would be transmitted to the European Parliament in a confidential manner.<sup>9</sup>

There was then the assessment of the ECB’s participation in the troika (ECB, European Commission, IMF). The European Parliament (European Parliament, 2014) addressed the bilateral pressure exerted by the ECB on Ireland before the December 2010 agreement and asked that Jean-Claude Trichet’s November 19, 2010, letter to the authorities of that country be published (which was finally done on November 6, 2014); denounced the ambiguity of the ECB’s role and the lack of transparency and democratic control; pointed out the risk of conflict of interest for the ECB as well as the lack of a mandate to deal with budgetary, fiscal, and structural issues; and called for the ECB in the future to be only an observer in the troika.

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In addition to the greater powers concerning appointments (see above), and the “traditional” systems, the creation of the SSM in 2014 has led to significant progress in terms of democratic control. On the basis of the 2013 regulation conferring tasks on the ECB concerning policies relating to the prudential supervision of credit institutions, an interinstitutional agreement (IIA) was concluded between the European Parliament and the ECB (European Parliament and ECB, 2013). This agreement sets up and specifies the conditions for confidential meetings and the consultation of classified documents, such as the full and comprehensive minutes of the Supervisory Board’s deliberations. It is this mechanism, for example, that made it possible for the European Parliament to put pressure on the SSM to respect its mandate, during the adoption of the “Addendum to the ECB Guidance to banks on non-performing loans: prudential provisioning backstop for non-performing exposures” (Gualtieri, 2017; Nouy, 2017).

Beyond these changes in the ECB’s institutional role, the question arises of how to control the active or passive redistributive effect of the unconventional monetary policy that was implemented after the great financial crisis through the asset purchase and/or quantitative easing programs. The question is also posed of the ECB’s commitment to pursuing the goals that refer to Article 3 of the TEU concerning climate change and the creation of a central bank digital currency.

### *The secondary mandate and future developments*

The impact of monetary policy on the conduct of fiscal policy or on the behavior of the markets, its redistributive effect and the conditions for implementing the secondary mandate raise an obvious democratic question. While defining price stability is clearly within the competence of the ECB, the same cannot be said of redistribution, housing policy, taxation, or how to achieve the goal of carbon neutrality by 2050 (which cannot be reduced to including taxonomy among the ECB's tools). "Reinforcing the power of central banks further today without adapting the legal framework raises a democratic question, which is all the starker because of the context of mistrust in our institutions." (Grjebine, 2021).

This discussion is all the more necessary given that the ECB operates in an entity, the Euro area, which is not, as has been said, a legal entity, that the existence of its public space is more difficult to embody than that of other central banks, and that, contrary to the Fed, it does not have a dual mandate. For a long time, some have felt that the difference in the mandate did not prevent a similar interpretation of the objective of price stability, but this is not the case in an environment of low interest rates, unconventional monetary policy, and where the ECB intends to actively take into account the stakes of climate change or contemplates creating a central bank digital currency.

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The ECB must integrate this into its communication strategy and the temptation is great to respond to the call for the ECB to assume a societal responsibility, as it is for other central banks.<sup>10</sup> But such a responsibility can only complement or uphold the ECB's institutional link with the European Parliament. It cannot replace it. It is to the European Parliament – the only institution of the Union directly elected by its citizens – that the ECB is accountable under the terms of the treaties; it is through the Parliament that it owes explanations to European citizens, hence the importance of adjusting this role according to how the ECB's responsibilities evolve.

The treaties made no provision for the ECB to be directly accountable to the European people, any more than it should be to the markets. "If monetary policy remains a conversation between central banks and financial markets, we shouldn't be surprised if people don't trust us. Too many see us as part of a financial system which has failed to deliver growth and fairness. And this also curtails our policy options." (Coeuré, 2019).

This is also true in relation to national parliaments, which the ECB understands perfectly well, but which should cause it all the more so to

listen to the European Parliament's calls for change. "In normal times, the ECB itself should not have direct relations with national Parliaments: the ECB, as a European Institution, is accountable only to the European Parliament. Only in highly exceptional times, as a courtesy to the National Parliament concerned, the ECB can, in my opinion, engage in such exchange of views." (Trichet, 2020).

Nevertheless, it was following the Karlsruhe court ruling of May 5, 2020, that the European Parliament raised anew its call for negotiating an IIA with the ECB. In order to demonstrate the proportionality of the ECB's Public Sector Purchase Program (PSPP), the ruling of the German Supreme Court led the central bank to communicate to the Bundestag, via the Bundesbank, documents to which the European Parliament does not have access; the ECB then decided to transmit the documents to the European Parliament, given the clear interest both institutions have in reaffirming the privileged nature of their relationship as defined by the treaties.

Whatever factor triggered this proposal, the forthcoming negotiations should be viewed as an opportunity to undertake the necessary updating of the framework for dialogue between the two institutions. To prepare for this, the European Parliament organized a monetary dialogue (European Parliament, 2020a), a hearing on improving the democratic accountability of the ECB (European Parliament, 2020b), and is calling for "the negotiation of a formal interinstitutional agreement to formalize and go beyond the existing accountability practices regarding monetary functions" (European Parliament, 2021a); ECON has obtained a mandate to negotiate from the Conference of Presidents (European Parliament, 2020c), but the ECB President will still have to convince the members of the Governing Council (European Parliament, 2021b).

That mandate, which in general amounts to codifying existing practices, should be viewed as a starting point and broadened to make it possible to implement a common approach concerning the appointment of the members of the Executive Board and the conditions under which the ECB discharges its secondary mandate; two subjects on which the ECB would be well advised to embrace the proposals allowing the role of the European Parliament to be improved. The 2013 IIA between the European Parliament and the ECB on the exercising of its prudential powers by the SSM should be referred to in order to legitimize the current proposal of the European Parliament to negotiate a new agreement, since the preceding one explicitly concerned the field of monetary policy as defined in Title VIII, Chapter 2, Article 127 of the TFEU. Article 284.3 defines the responsibility of the ECB in relation to the European Parliament in the field of monetary

policy. There is nothing in article 284.3 to indicate that a distinction should or could be made in the system of accountability that is to be set up within monetary policy between what would come under paragraphs 1, 2, and 6 of article 127; what is possible for paragraph 6 should be possible for the others.

Beyond the question of improving the expertise available to MEPs to evaluate monetary policy based on unconventional operations – which are becoming increasingly complex – the first question raised has been on how to associate the European Parliament in the strategic review undertaken by the ECB. In reality, the ECB has been informing the European Parliament, as the Fed did with Congress. The review has been treated as one of the topics of a monetary dialogue (European Parliament, 2019c). An ECON delegation visited the ECB in February and May 2021 to discuss it, while both the ECB President and Executive Board member Philip Lane participated in a coordinators’ meeting. More could have been made – the European Parliament had already spoken out in 2018 on the issue of sustainable finance for the ECB; the request for an IIA had been formulated and the review would have benefited from more in-depth dialogue with ECON, as evidenced by Pedro Silva Pereira’s question on the conditions for extending the Emergency Purchase Program if the Covid-19 pandemic continues (European Parliament, 2021b).

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How can or should the European Parliament intervene in this debate about the new ECB doctrines?

Two ways of approaching this challenge can be envisaged.

A whole series of proposals concern the creation of a new structure. The idea of a subcommittee for the Euro area has already been mentioned. Others raise the idea of a structure that would be composed of national parliamentarians from euro area Member States. But that would be at variance with the treaties, which make the European Parliament the interlocutor for the ECB. Before thinking of creating a new body, it is also useful to look at how the Conference of Parliamentary Committees for Union Affairs of the Parliaments of the European Union (COSAC) functions and the difficulty of creating any momentum with it.

Some are proposing a Euro area subcommittee (see above). Eric Monnet (Monnet, 2021), in his remarkable analysis of the evolution of the functioning and the role of central banks, proposes nevertheless the creation of a “European Credit Council” on the grounds that, in his opinion, the European Parliament exercises “extremely limited control over the ECB and over the discussion of monetary policy”, due to the unevenness of information and the absence of diverse viewpoints. But

that does not reflect the reality of the monetary dialogues or the existence of the European Parliamentary Weeks, which once a year bring together members of national parliaments and MEPs with members of the Council presidency and the Commission. The “council” being proposed seems to be modeled after the European Fiscal Board, an autonomous control body, which allows “national governments [...] to protect themselves from each other” (Magnetete, 2000); it is hard to make it into a model for a democratic control body, however good the work it does may be, when it is the political question of the ECB’s secondary mandate that should be discussed.

In fact, these proposals underestimate the accumulated practical experience and the genuine obstacles in the Governing Council or the Council; they propose a new institutional adventure – when we know how long it takes to install transnational democratic practices – rather than working to improve the existing framework, which is feasible under the existing treaties.

The fact remains that MEPs sometimes neglect this role of control, given the little impact it has on the actual activity of the Council or the ECB, and concentrate on legislative work instead. Some say that there is no real control by the European Parliament because it has no power to sanction. Which is said to be why it does not even try to exert control. “The Parliament has had a lot of trouble in exercising real control over these diverse and competing bodies. Moreover, it seems to pay little attention to them, concentrating more on its legislative functions.” (Magnetete, 2000). Giving the Parliament more power would be an effective way to enhance its role.

The other approach is to explore the conditions for a substantive annual debate on “general economic policies in the Union” by the European Parliament. This would shape the macroeconomic debate. Because “coordination of monetary and economic policy is essential to the smooth functioning of EMU”, starting in 1998, the European Parliament has proposed “to invite the ECB President to take part in the general debate on monetary and economic developments over the previous and the current year, on the basis of the Annual Report of the ECB and the Annual Economic Report produced by the Commission” (European Parliament, 1998, recital E and paragraph 12). This should be reflected in the presence of the President of the Eurogroup and the Commissioner in charge during the presentation and debate of the ECB’s annual report in the plenary session. But Jean-Claude Trichet, President of the ECB, did not respond in April 2006 to the letter from Jean-Claude Juncker, President of the Eurogroup, and Joaquín Almunia, Commissioner for Economic and Monetary Affairs, who proposed



to him more in-depth dialogues on economic and monetary policy, nor has this format existed.

This is what we propose around the vote on the ECB's annual report (Berès *et al.*, 2021). This report could be preceded by a discussion with academics and representatives of civil society during the European Parliamentary Week in which the Commission and the Council take part. Such a debate is in perfect conformity with the treaties and the independence of the ECB. Extending this reasoning, some (Boer and Klooster, 2021) propose that the vote on the annual report serve as a basis for a decision by the Council. It should be demanded that such a Council debate be public. If we want to optimize the involvement of MEPs in this process, we should go even further and make this a co-decision (European Parliament, 2011), which could concern an annual definition of "general economic policies in the Union", in the context of the adoption of the report on the annual sustainable growth strategy. Unless a real budget for the Euro area existed – with a counter-cyclical capacity – on which the European Parliament would have to vote.

The political problem that these proposals raise is the risk of jeopardizing the political offensive in support of economic activity led by the ECB and the difficult internal compromises it has successfully realised between "hawks" and "doves". They have resulted in successive resignations from the Executive Board – Jürgen Starck in September 2011 and Sabine Lautenschläger in September 2019, as well as Alex Weber in February 2011 as head of the Bundesbank and member of the Governing Council. These discussions explain to a great extent the delay, in comparison with the Fed or the Bank of England, with which the ECB launched its own quantitative easing program. The "hawks", supporters of ordoliberalism, are waging a battle inside and outside the ECB against any intervention that might go beyond a strict interpretation of its price stability mandate. Paradoxically, they denounce the policies of the ECB, although they are officially sticklers about guaranteeing its independence; they are also often the same ones who refuse to make any significant progress towards a Euro area budget, borrowing capacity, or automatic stabilization tools in the Euro area; they are – in an unnatural alliance – allies of those who, in the name of democratic accountability, demand transparency and oversight of the ECB's actions.

Nevertheless, the ECB has assumed its responsibilities and has been able to or had to play this role in the absence of a consensus among the finance ministers on economic policy. Nicolas Jabko argues that this was all the more important because some governments, after having increased their deficits and debts at the national level in order to save

their banks in 2008, did not take responsibility for solidarity with other Member States before their national public opinion. On the basis of populist sovereignty they implemented a policy of austerity, contrary to the widely accepted idea that it was the ECB or the Commission that dictated that approach in the name of ordoliberalism (Jabko, 2021), even though their role in the Troika cannot be ignored. Eric Monnet demonstrates that the ECB is in fact an instrument of the welfare state, especially since the absence of a tool for guiding the area on an economic level and the crises have made its interventions indispensable and welcome (Monnet, 2021).

However, the secondary effects on redistribution and the way in which the ECB implements its secondary mandate require a democratic debate. While respecting the treaties and capitalizing on the positive results of the policies carried out by Frankfurt, it is necessary to risk a democratic debate that goes together with a broad interpretation of its mandate. Various windows of opportunity for progress in this direction should be used, whether it be the negotiation of the IIA, the reform of economic governance, or the conference on the future of the European Union and, ultimately, a possible revision of the treaties.

## NOTES

1. TFEU Article 127.1: “The primary objective of the European System of Central Banks (hereinafter referred to as ‘the ESCB’) shall be to maintain price stability. Without prejudice to the objective of price stability, the ESCB shall support the general economic policies in the Union with a view to contributing to the achievement of the objectives of the Union as laid down in Article 3 of the Treaty on European Union.”

2. TEU Article 3.3: “The Union shall establish an internal market. It shall work for the sustainable development of Europe based on balanced economic growth and price stability, a highly competitive social market economy, aiming at full employment and social progress, and a high level of protection and improvement of the quality of the environment. It shall promote scientific and technological advance.”

3. TFEU Article 127.5: “The ESCB shall contribute to the smooth conduct of policies pursued by the competent authorities relating to the prudential supervision of credit institutions and the stability of the financial system.”

Article 127.6: “The Council, acting by means of regulations in accordance with a special legislative procedure, may unanimously, and after consulting the European Parliament and the European Central Bank, confer specific tasks upon the European Central Bank concerning policies relating to the prudential supervision of credit institutions and other financial institutions with the exception of insurance undertakings.”

4. TFEU Article 284.3: “The European Central Bank shall address an annual report on the activities of the ESCB and on the monetary policy of both the previous and current year to the European Parliament, the Council and the Commission, and to the European Council. The President of the European Central Bank shall present this report to the Council and the European Parliament, which may hold a general debate on this basis.”

“The President of the European Central Bank and the other members of the Executive Board may, at the request of the European Parliament or on their own initiative, be heard by the competent committees of the European Parliament.”

5. TFEU Article 283.2: “The Executive Board shall comprise the President, the Vice-President and four other members.”

“The President, the Vice-President and the other members of the Executive Board shall be appointed by the European Council, acting by a qualified majority, from among persons of recognised standing and professional experience in monetary or banking matters, on a recommendation from the Council, after it has consulted the European Parliament and the Governing Council of the European Central Bank.”

“Their term of office shall be eight years and shall not be renewable.”

6. The ECON vote on October 22, 2012 was 20 for rejecting the nomination, 13 against, 12 abstentions; the plenary session on October 25, 2012, voted 325 for rejection, 300 against, 49 abstentions.

7. Council Regulation (EU) 1024/2013 of October 15, 2013, conferring specific tasks on the European Central Bank concerning policies relating to the prudential supervision of credit institutions.

Article 26.2: “The appointments to the Supervisory Board in accordance with this Regulation shall respect the principles of gender balance, experience and qualification.”

Article 26.3: “After hearing the Supervisory Board, the ECB shall submit a proposal for the appointment of the Chair and Vice-Chair to the European Parliament for approval. Following the approval of this proposal, the Council shall adopt an implementing decision to appoint the Chair and the Vice-Chair of the Supervisory Board.”

8. Regulation (EU) 2019/2175 of the European Parliament and of the Council of 18 December 2019 amending the ESA statute.

Article 48.2.2: “The Chairperson shall be selected on the basis of merit, skills, knowledge of financial institutions and markets, and of experience relevant to financial supervision and regulation, following an open selection procedure which shall respect the principle of gender balance and shall be published in the *Official Journal of the European Union*. The Board of Supervisors shall draw up a shortlist of qualified candidates for the position of the Chairperson, with the assistance of the Commission. Based on the shortlist, the Council shall adopt a decision to appoint the Chairperson, after confirmation by the European Parliament.”

9. Regulation (EU) 2019/2176 of the European Parliament and of the Council on the European Systemic Risk Board, Articles 9.4 and 16.3.

10. See the article by Laurence Scialom in this issue.

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## Financial History Chronicle

# DID THE FINANCIAL MARKETS SEE THE GREAT WAR COMING?

TOBIAS A. JOPP\*

**A** look at the literature reveals that we still know little about whether the financial markets saw the outbreak of the Great War coming. Analyzing sovereign bond prices in the run-up to the war, Ferguson (2006, pp. 73-74) has argued that its outbreak came as a true surprise for the London financial market. Bondholders assessed the possibility of a great war breaking out as extremely low until the very last days of July 1914, when sovereign bond prices dropped abruptly, leading to the closure of the stock exchange on 31 July 1914.

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This assessment is based on what most fundamentally determines a bond price, namely, how bondholders value the underlying asset. In the case of a sovereign bond, this underlying asset is a state's long-run financing capacity. A bond's value at a particular point in time equals the current value of all future streams of interest payments and the principal that is to be redeemed. Technically, besides a bond's financial characteristics, the prime determinants of a bond's value are the default probabilities that bondholders attach to each payment stream (determined, in turn, by expectations based on economic fundamentals, such as economic growth), bondholders' rate of time preference and their inflation expectations, and idiosyncratic shocks (e.g., Weidenmier and Oosterlinck, 2007). Historically, being involved

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in a war has affected both a state's ability and willingness to service its debts. It is above all the outcome of the war that determines the likelihood of bondholders receiving payments. If the borrowing country comes out victorious, it might shift some war costs (in the form of reparations) onto the defeated country (or countries) in order to take pressure off its own government finances or, if it is defeated, it would instead be forced to pay (White, 2001; Occhino *et al.*, 2008). Thus, we may conclude that bondholders trading on the London sovereign bond market did not see a reason to adjust their combined default and inflation expectations or their time preference until they were caught off guard by the actual events around the outbreak of the war on 28 July 1914.

Ferguson's conclusion on investor opinion seems to back one recent path taken towards explaining the outbreak of the Great War. This path may be put under the "sleepwalker hypothesis" label advanced by Clark (2013) – the unwanted, more or less unconscious slide into the war that was born out of negligence. However, there is also a more recent study, which to a certain extent supports the more traditional view of seeing the war as being the natural end point of a road of steeply rising political and military tensions among the European powers, fueled especially by an "arms race" (Eloranta, 2007). Analyzing two Ottoman government bonds traded on the Istanbul Stock Exchange between 1910 and 1914, Hanedar *et al.* (2015) argue that investor's trades implied rising country risk due, especially, to the conflicts in the Balkans in 1911 and 1912, in which the Ottoman Empire was involved. This led the Istanbul market and Turkish politicians to lend greater credence to the rather high likelihood that a great war would soon break out.

The following table is an attempt to verify Ferguson's financial market-related "surprise hypothesis" for three important European markets, namely Paris, Berlin, and Amsterdam. The table shows the price evolution of selected sovereign bonds in the weeks preceding the closures of these stock exchanges. For illustrative purposes, the price for the first week after the respective exchanges reopened is shown too. Due to the fact that the cross-sections of sovereign bonds traded at the four trading places differ, an attempt has been made to put together a representative-enough sample of the major powers' bonds in order to best demonstrate what happened. If markets had expected the outbreak of the Great War, a gradual and pronounced decline in the price of a major power's bonds would have occurred between January 1914 (or perhaps earlier) and the final trading days before trade was stopped. This could be interpreted as a sign that the market was gradually factoring the increasing risk



**Table**  
**World War One: a Surprise to Investors?**

| Trading place/ Bond                | 3 January<br>1914 | 18 April<br>1914 | 25 July<br>1914 | 28 July<br>1914 | 1 August<br>1914 | 29 August<br>1914 | Did the outbreak<br>of the war come<br>as a surprise? | Price in first week after resumption<br>of trade in the particular bond |
|------------------------------------|-------------------|------------------|-----------------|-----------------|------------------|-------------------|---|---|
|                                    | (1)               | (2)              | (3)             | (4)             | (5)              | (6)               | (7)   | (8)   |
| <b>London</b>                      |                   |                  |                 |                 |                  |                   |   |   |
| German 3.0% imperial loan          | 75.0*             | 77.0*            | 75.0*           | -               | 72.0*            | -                 | Yes   | 54.0<br>(27 February 1915)  |
| Hungarian 4.0% kroner perpetual    | 83.0              | 83.0             | 77.0            | -               | 74.0             | -                 | No  | 53.0<br>(30 January 1915)   |
| Russian 5.0% of 1906               | 102.7*            | 104.0*           | 102.0*          | -               | 93.0*            | -                 | Yes   | 93.2<br>(2 January 1915)  |
| Turkish 4.0% of 1903               | 77.8 <sup>a</sup> | 83.0             | 80.5            | -               | 78.0             | -                 | Yes   | 62.0<br>(16 January 1915)   |
| UK 3.0% consols                    | 71.7*             | 75.7*            | 74.9*           | -               | 69.2*            | -                 | Yes   | 68.5<br>(2 January 1915)  |
| <b>Paris</b>                       |                   |                  |                 |                 |                  |                   |   |   |
| Austrian 4.0% of 1876-1892 (8 fl.) | 89.0              | 86.7             | 84.3            | -               | -                | -                 | No  | 59.0<br>(14 May 1915)   |
| French 3.0% perpetual              | 85.2              | 86.7             | 80.0            | -               | -                | 75.0 <sup>b</sup> | Yes   | 70.5<br>(19 December 1914)  |
| Hungarian 4.0% (4 fl.)             | 90.4              | 85.7             | 79.0            | -               | -                | -                 | No  | 65.0<br>(19 December 1914)  |
| Russian 5.0% of 1906               | 103.0             | 103.7            | 91.3            | -               | -                | 89.7              | No (?)  | 93.5<br>(9 January 1915)  |
| Serbian 4.0% (20 fr.)              | 83.4              | 81.0             | 73.5            | -               | -                | 64.0              | No  | 66.0<br>(9 January 1915)  |
| Turkish 4.0% of 1903 (20 fr.)      | 86.0              | 81.7             | 79.8            | -               | -                | -                 | Yes (?)   | 62.0<br>(9 January 1915)  |

| Trading place/ Bond             | 3 January | 18 April | 25 July           | 28 July           | 1 August | 29 August | Did the outbreak<br>of the war come<br>as a surprise? | Price in first week after resumption<br>of trade in the particular bond |
|---------------------------------|-----------|----------|-------------------|-------------------|----------|-----------|---|---|
|                                 | 1914      | 1914     | 1914              | 1914              | 1914     | 1914      |   |   |
|                                 | (1)       | (2)      | (3)               | (4)               | (5)      | (6)       | (7)   | (8)   |
| <b>Berlin</b>                   |           |          |                   |                   |          |           |   |   |
| Austrian 4.0% kroner perpetual  | 84.2      | 82.6     | 74.0              | 73.0 <sup>d</sup> | -        | -         | No  | -   |
| German 3.5% imperial loan       | 85.3      | 87.1     | 85.9              | 84.0 <sup>c</sup> | -        | -         | Yes   | -   |
| Hungarian 4.0% kroner perpetual | 82.4      | 82.0     | 75.5              | 71.2 <sup>d</sup> | -        | -         | No  | -   |
| Russian 4.0% consols of 1880    | 87.9      | 86.6     | 81.0              | 76.0 <sup>d</sup> | -        | -         | No  | -   |
| Serbian 4.0% of 1895            | 79.3      | 78.7     | 72.1              | 64.7 <sup>d</sup> | -        | -         | No  | -   |
| <b>Amsterdam</b>                |           |          |                   |                   |          |           |   |   |
| Austrian 4.0% kroner perpetual  | 82.3      | 82.8     | 78.5 <sup>e</sup> | 72.0              | -        | -         | Yes   | 56.1<br>(24 August 1915)  |
| German 3.0% imperial loan       | 75.2      | 76.8     | 75.9 <sup>e</sup> | 75.0              | -        | -         | Yes   | 57.7<br>(3 September 1915)  |
| (Apr/Oct)                       |           |          |                   |                   |          |           |   |   |
| Hungarian 4.0% kroner perpetual | 83.1      | 82.0     | 78.5 <sup>e</sup> | 78.0              | -        | -         | No (?)  | 54.5<br>(24 August 1915)  |
| (100/1 000)                     |           |          |                   |                   |          |           |   |   |
| Russian 5.0% of 1906 (500)      | 100.7     | 99.5     | 99.9 <sup>e</sup> | 94.5 <sup>f</sup> | -        | -         | Yes   | 81.1<br>(24 August 1915)  |
| Turkish 3.0% of 1903 (500)      | 80.1      | 77.5     | 78.0 <sup>e</sup> | 73.9 <sup>f</sup> | -        | -         | Yes   | 51.0<br>(26 August 1915)  |

Notes: The London Stock Exchange remained closed between 31 July 1914 and 4 January 1915. The Paris Stock exchange remained closed between 1 August and mid-August 1914, and then again between 2 September and 14 December 1914. The Berlin Stock Exchange remained closed for trade in bonds between 31 July 1914 and 1 September 1919. The Amsterdam Stock Exchange remained closed between 29 July 1914 and 9 February 1915. Prices are in percent of par value and rounded to one decimal place. London and Paris prices are from a weekly sample I gathered, with prices recorded for Saturdays. The London price marked with "a,b" is the average of the daily minimum and maximum prices reported in the respective source. Paris and London prices are reported on Saturdays but refer to the previous Friday. In parentheses at the end of the bond name a necessary addition is made to identify the subseries (either denomination or months of interest payments). Sources do not always identify the subseries for which the price is reported. <sup>a</sup> Price is for 30 January. <sup>b</sup> Price is for 22 August. <sup>c</sup> Price is for 29 July. <sup>d</sup> Price is for 30 July. <sup>e</sup> Price is for 24 July. <sup>f</sup> Price is for 27 July.

Sources: Jopp (2021, Ch. II.2.2, Table 9, and Ch. III.1., Table 18).

of war into bond prices. However, if the outbreak of the war had come as a surprise, such a gradual decrease would not be observed, or the decrease would happen suddenly, right when war broke out on 28 July 1914.

The evidence presented in the table implies that financial market data, when broken down to single securities, do not give a unanimous picture. Investors at the different trading places might have judged the sovereign risk of the same country differently; e.g., the assessment of Austria's country risk in Paris and Berlin compared to the Amsterdam market. However, the evidence generally supports the "surprise hypothesis" for all marketplaces. When the table shows that the outbreak of the war did apparently not come as a surprise for traders in Austrian, Hungarian, and Serbian bonds, this should be taken as reflecting the fact that a *local* conflict was thought to be coming. Such a conflict could have involved Russia as well, as the protective power in the Balkans. This conclusion is supported by the behavior of the Paris and Berlin market prices. An all-out conflict seemed to be an unlikely event in the eyes of investors trading in all the major European marketplaces. This assessment holds regardless of the formal interconnections between the major powers via bilateral or multilateral alliances, which traders of the day presumably knew about. We may say, therefore, that investors did not generally believe in the credibility of the threats inherent in the alliance system that had been established over the past three or so decades prior to the Great War. What is more, after resumption of trade in late 1914 or sometime in 1915, prices for all countries show a severe downward adjustment compared with the last pre-war prices. This difference can be interpreted as the bondholders' net downward adjustment of their default expectation, informed by the initial campaigns over the first part of the war and, in particular, by the insight that the war would not be as short as had been widely assumed when it broke out ('short-war illusion'; e.g. Farrar, 1973). If the coming of the war and, consequently, its impact on public finances, had been expected, these adjustments, we can argue, would have been smaller, since much of the increased country risk would have already been factored into prices.

Did investors in London and elsewhere actually ignore basic political facts? According to Ferguson (2006), they did not. Financial markets were generally well integrated on the eve of World War One – that is, the major and minor powers that would eventually fight the war were as interlinked financially and economically, as they were interlinked in the international system of alliances (e.g. Obstfeld and Taylor, 2003). Against this background, a great conflict seemed to be highly unlikely, as it constituted too high an economic risk. Looking at the long-term

development of the major powers' sovereign bond spreads in London in the decades prior to 1914, Ferguson puts it this way: "The yields on the bonds of the other great powers, which accounted for about half the foreign sovereign debt quoted in London, declined steadily after 1880, suggesting that political risk premiums were also falling. Before 1880, Austrian, French, German, and Russian bonds had tended to fluctuate quite violently in response to political news; but the various crises of the decade before 1914 – such as those over Morocco and the Balkans – caused scarcely a tremor in the London bond market." (2008, p. 443).

The first news in the London market as to the potentially harmful effects of the latest political crisis on the international financial system, based on Archduke Ferdinand's assassination (28 June 1914), dates from 22 July 1914 (Ferguson 2008, p. 445). So investors, as well as the financial press in London, had good reason to believe that financial ties would prevent the European Powers from eventually going to war. The evidence from bond prices of the Paris, Berlin, and Amsterdam marketplaces fit this picture.

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VARIA



# DOES THE EVOLUTION OF PRUDENTIAL STANDARDS AFFECT THE RISK OF NON-COMPLIANCE BANKS IN CEMAC COUNTRIES?

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The Great Financial Crisis of 2007-2008 led to a significant increase in the number of regulations and the likelihood of compliance risk as well as the fines said risk sanctions. Now, the prospect of a bank or management company going bankrupt as a result of such an event is being seriously considered. In response to the various banking crises, the international community, through the Basel Committee, has regularly adapted the rules of banking supervision. The main goal is to ensure the stability of the banking system as a global public asset through effective supervision of banks and promotion of mutually beneficial cooperation between supervisors (Lasserre, 2010). However, there remains the risk for banks of not being compliant with these prudential rules. Such compliance risk is defined as a failure to comply with regulatory standards applicable to banking and financial activities, including those relating to the prevention of money

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laundering and terrorist financing but also as a failure to comply with professional and ethical standards and practices (Martin, 2000).

The adaptation of banking supervision rules internationally has taken place since 1988 through three agreements. The 1<sup>st</sup> Basel I Accord, known as the “Cooke” ratio, was published in 1988. It proportions the risks to which the bank is exposed to the amount of capital it can mobilise to meet its commitments to its creditors (Hugon *et al.*, 2009). The quick evolution of techniques and changes in banking systems, and the incentive for regulatory arbitrage undermined the effectiveness of Basel I as a reliable indicator of solvency. Thus, in 2004, the Basel Committee adopted Basel II, known as the “McDonough” ratio. It is based on minimum capital requirement, a supervisory review process and the implementation of market discipline. With the GFC, the weaknesses of Basel II became apparent as banks proved unable to cope with recurring shocks, leading the Basel Committee to issue the Basel III Accord in 2010, which compels the regulatory framework to remain focused on a risk-based capital requirement system with liquidity and leverage ratio indicators (Hache, 2012). The monetary authorities were given the opportunity to adapt it to different contexts, taking into account the evolution of the banking system (Aglietta, 2011).

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In the CEMAC (Central African Economic and Monetary Community)<sup>1</sup>, alignment with the international prudential framework coincided with the reforms implemented in response to the financial crisis of the 1980s and 1990s (Avom *et al.*, 2007). Reforms included a complete overhaul of the regulatory framework, as well as supervisory tools. The new regulatory framework combined with internal control should have an effective impact on business, competition, deposits and credit supply, but also on the solvency and organisation of banks (Dietsch, 2005). These reforms came with a rationing of the credit supply despite the growing financing needs of agents – mainly SMEs/SMIs that depend on bank lending (Bikai *et al.*, 2019).

As of 30 June 2019, CEMAC countries comprised 50 banks, 32 of which were in compliance with the requirements for minimum capital representation. In terms of solvency, 41 had a net capital-to-risk weighted assets ratio equal to or greater than the minimum of 8%. Under the risk-splitting standards, 41 met the overall limit of 15% of capital, while 31 met the limit of 45% of net capital. Regarding the coverage of fixed assets by permanent capital, 40 achieved a ratio greater than or equal to the minimum of 100%. Regarding the liquidity ratio, cash and cash equivalents are greater than or equal to the regulatory minimum of 100% of the same term liabilities for 43. As for compliance with the long-term transformation coefficient (net table



funding ratio), 39 managed to finance at least 50% of their needs with permanent capital. Finally, 35 kept the sum of liabilities to their shareholders, directors and officers, and staff below the regulatory limit of 15% of net capital (BEAC, 2019).

Despite the overall compliance of CEMAC banks with regulatory requirements, this system has led to unintended consequences (Larosière *et al.*, 2009). For example, the multiplicity of constraints and their parameterisation will lead, even after the adaptation and transition period, to an increase in the cost of credit, and to a contraction of supply with increased competition. This increased competition reduces financial margins, leads to a decrease in statutory value and an increase in risk-taking. Two criticisms are associated with developments in banking regulation and supervision (Combe *et al.*, 2013). On the one hand, the accounting framework is considered to be procyclical, as it increases the variability of balance sheets and results, which change with business cycles. Moreover, it is not very readable and thus requires explanations (elimination of general provisions, generalised recognition of unrealised capital gains, including on models), while strongly accentuating leverage. On the other hand, the prudential system appears to be extremely complex, cumbersome to audit, and favours the capital of large banks (the riskiest in systemic terms), thus guaranteeing self-regulation, especially for large banks (Leroy, 2013).

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The environment in which CEMAC banks operate requires them to master an increasing number of techniques and regulations and to implement an increasingly rigorous risk management policy (Italianer, 2010). Indeed, there has been a diversification of banking activities, an increase in the range of banking products, a development of complex operations and an intensification of competition between banks, which has resulted in increased profitability constraints. Overall, CEMAC banks have seen their risks increase and diversify within evolving legal frameworks (Avom *et al.*, 2017). This trend implies a very high level of vigilance on the compliance of their operations, where disintermediation is encouraged by the regulations themselves (Frison-Roche, 2013).

This article focuses on compliance risk. More specifically, it examines the possible orientations of this risk to better understand, measure, control and limit its impact. First, it reviews, in the light of the work carried out within the Basel Committee and examples of specific regulations recently drawn up in the CEMAC, the envisaged methods of regulating the control of compliance risk. It then recalls the CEMAC regulatory cornerstone from which the control of compliance risk can already be exercised. Finally, with a view to strengthening internal control, it attempts to define several suggestions for reflection on the ways in which such control could be structured.

The prudential rules in force in the CEMAC are based on Basel I and Basel II requirements. However, neither the 8% threshold of the Cooke ratio, nor the definition of capital in the McDonough ratio, nor risk-weighted assets were chosen according to the regional banking environment. More than twenty years have already passed since the implementation of these reforms, and it is appropriate to objectively question the perverse effects on the region's prudential system. To what extent does the international capital standard promote banking competition in the CEMAC? What is the effect of prudential ratios on the level of compliance risk of CEMAC banks? This article attempts, through empirical investigations, to provide answers to these important questions. As far as we know, few studies have examined the perverse effects of banking regulation in this space. One of the main objectives is to address this shortcoming and to conclude on the factors that could lead to cyclical variations of capital requirements in CEMAC.

After this introduction, the rest of the study is organised as follows: Part 1 presents an overview of the state of the art. Part 2 presents the empirical strategy. Part 3 discusses the results, while part 4 concludes and suggests a few recommendations.

### *SUMMARY OF THE STATE OF THE ART*

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It is not our ambition to provide an exhaustive review of the abundant literature on the determinants of compliance risk for banks. We will limit ourselves to a very brief discussion of three main determinants which are decisional, financial and regulatory.

#### *Decision-making determinants*

They encompass the set of institutional constraints that limit the competitive dynamics driven by market forces and reduce banks' interest margins during periods of excessive credit growth (Shekhar *et al.*, 2012). These constraints stem mainly from the unification of the legal framework, the abolition of compulsory uses, the lifting of credit control, the gradual liberalisation of interest rates, the stimulation of the money market and the strengthening of prudential rules. Indeed, a number of parameters are at the discretion of banking supervisors, including the risk measurement model used by each financial institution (Borio, 2009). This 'freedom' appears to be counterproductive as it potentially subjects supervisors to political pressure and disgruntled shareholders. This is why Rochet (2010) is concerned about the Basel Committee's difficulty in identifying the endogeneity of banking and financial risks resulting from the decisions of agents, which are not incorporated by the Basel Committee on Banking Supervision (BCBS). These criticisms are compounded by the BCBS's long-

standing and much-maligned inability to anticipate and take account of the increasing complexity of financial instruments.

Bonneau (2010) also notes the difficulties of the Basel Committee in taking financial innovations into account. This limitation is directly attributed to the prudential authorities which allow financial institutions to introduce new techniques directly at the heart of the financial system. These new techniques, the shortcomings of which are largely unknown, maintain a particular cycle that Leroy (2013) summarises as innovation - buzz - panic - overregulation. Indeed, banking supervision as part of risk management and the role of central banks as lenders of last resort contribute strongly to the risk of moral hazard. Supporters of Adam Smith's invisible hand criticise government intervention as it encourages risk-taking by financial institutions, which are guaranteed public relief if they run into trouble. This approach, which has been heavily criticised, is quickly confronted with the problem of systemically important financial institutions (SIFIs). These too-big-to-fail institutions play a very important role in new regulations. The SIFIs, which include TBTF (*too big to fail*) and LCBOs (*large and complex banking organisations*), were assured at G20 summits of unconditional and systematic public support in case of default. Hache (2010) argues that this support, "even if it were justified *ex post*, was catastrophic in terms of moral hazard and market discipline".

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### *Financial determinants*

The financial determinants of banks' non-compliance are largely due to the inability to physically isolate the production of certain services or the performance of certain duties, or to the existence of 'connected' products, the implementation of which is inseparable (Repullo, 2004). Such productivity is seen in terms of financial development, which is measured by the volume of loans granted (Fouda Owoundi, 2009). These constraints stem mainly from imperfect capital markets. One of the characteristics of developing countries is that they are structurally capital-intensive (Bobbo, 2016). This capital deficit becomes more pronounced during economic downturns (Bonneau, 2010). The inability to secure sufficient financial resources to limit such decline and reverse the trend then results in procyclical regulatory policies increasing in low phases of the cycle (Leroy, 2013).

The different works identify the financing constraints from the aspects of the banking industry. From this lens, through the market crisis variable, Shehzad *et al.* (2010) emphasise the financing constraints linked to an increase in the risk borne by banks on the assets of their balance sheet. A large part of the banks' business is the securitisation of complex products. To avoid burdening their balance

sheets and to not be constrained by regulation, these instruments do not stay on the banks' balance sheets but are sold on to the market. Banks, wishing to avoid reputational and liquidity risk, decide to repatriate these assets leading to the implementation of a procyclical regulatory policy, i.e. their propensity to amplify the real shocks suffered by the economy. Avom *et al.* (2018) focused their analysis on the liquidity crisis in the market, the main source of bank financing. This liquidity crisis led to a drastic reduction in loans granted, a major factor in the spread of the financial crisis to the real economy. In contrast, Garcia *et al.* (2008) based their analyses on the inadequate levels of banks' capital. For the latter, market capitalisations have been considerably reduced and reinforced by accounting rules. The risk borne by banks' assets has increased and, as a result, the level of capital required to meet prudential ratios has also increased. Banks are forced to seek liquidity, but in a climate of generalised mistrust, this proves extremely difficult (Gambacorta *et al.*, 2013).

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One of the most destabilising elements of the crisis was the procyclical amplification of financial shocks throughout the banking system, financial markets, and the wider economy (Idot, 2014). The tendency of market participants to behave in a procyclical manner has been amplified in various ways, including by accounting standards (Zhang *et al.*, 2008). Credit procyclicality and increased compliance risk occur when the state of confidence expands, and interest rates remain below expected profit rates. Credit fuels growth without banks always being able to properly assess the creditworthiness of borrowers (Arjani, 2009). The credit boom encourages excessive speculation and then price rises, then replaced by asset price inflation. This again feeds the cumulative process. The risk of non-compliance is underestimated during booming and euphoric phases. This reflects, among banks, low spreads, excessive exposure growth, artificial collateral inflation and reduced provisions (Allen *et al.*, 2004). Conversely, this risk is overestimated in phases of economic slowdown or downturn. It is in this respect that financial systems can generate both procyclical effects on output and increased financial instability, leading to longer phases of growth, but also to more severe and longer-lasting downturns (Aghion and Marinescu, 2007).

### *Regulatory determinants*

The regulatory determinants compensate for the insufficient explanation of the decisional and financial factors. Competition between banks can encourage them to improve the value for money of financial services and foster innovation. Thus, capital adequacy regulations can put banks at a disadvantage compared to other non-bank financial institutions. It seems unlikely, however, that the loss of market share by

banks is due to capital requirements. Financial innovation, technological development or strong regulatory constraints play a key role in explaining this trend. In such a setting, and in the absence of regulatory barriers, there is an increasing financial safety net related to the cost of capital<sup>2</sup> on the part of banks that have tried to capture a larger market share by requiring more barriers to entry (Beck *et al.*, 2008). The empirical analysis of such measure was led by Jenny (2009) on a sample of Canadian banks over the 1992-2006 period. The author developed a methodology to assess a bank's risk exposure and the quality of its risk management practices. His study will be enriched by that of Jelloul *et al.* (2011) which, in addition to regulatory distortions, also highlight the loss of confidence induced by massive deposit withdrawals, severely restricting the bank's lending capacity or even causing its bankruptcy. According to the latter, such an environment is conducive to the development of pro-cyclical regulatory behaviour. As a result, regulatory pressures are exacerbated in times of economic recovery. This triggers perverse effects, notably the decrease in the bank's profitability induced by the increase of the "equity/assets" ratio. Banks' investment policy is changing as a result of reduced profitability (Scialom, 2011).

The contributions of Betbeze *et al.* (2011) also show that the increase in risk is the result of tighter capital requirements. Interbank credit is a major channel of contagion, but also a source of regulatory procyclicality. In a competitive system in particular, capital regulation indirectly affects the transparency of banks' balance sheets by encouraging banks to use securitisation more intensively (Massoud, 2013). These lead to an excessive build-up of capital in relation to the consistent management of the bank's balance sheet over time. As a result, for the same amount of loans, the bank needs more capital, which reduces dividends for existing shareholders. The new shareholders compensate for this loss by paying a price on the market for the shares issued by the bank. These shareholders usually then seek to increase spending in favour of their shares, thereby generating a policy of procyclical behaviour (Calderon *et al.*, 2011). Banks, as with any other form of constraint, try to circumvent regulation through the development of techniques based on a cost-benefit analysis of their compliance with regulatory obligations (Ginsburg, 2014).

While the distortions resulting from the operation of competitive systems generate procyclical regulatory policies, Bikai *et al.* (2019) argue that the move towards financial innovation, especially in CEMAC countries, also exacerbates them. Using signal theory, they show that shareholders tend to take advantage of distortions related to regulatory pressure that increases (decreases) during economic downturns (upturns), thus inducing procyclicality in capital adequacy rules.

The issue is even more crucial in the case of financial conglomerates or large, complex financial institutions, which generally have many and varied activities (Bing Xu *et al.*, 2013). Setting a minimum capital in line with the risk profile is an important factor for financial efficiency (Idot, 2014). This reform will encourage the recognition of banks' risky behaviour, by making risky assets more expensive in terms of capital (Boot *et al.*, 2001). The allocation of regulatory capital would become fairer between banks, as bank portfolios with low average quality would be penalised and facilitated by the absence of strict regulation (Gordy, 2002).

The contribution of this study is to empirically assess in this section, for CEMAC countries, the determinants of the compliance risk of exposed banks. It shows that the development of the prudential system adopted by CEMAC countries explains, in the same way as the traditional determinants, the procyclical behaviour of prudential regulations and that of banks. The decision to adopt the new Basel capital standards for credit institutions by CEMAC prudential authorities was taken in 2003. This decision was aimed at bringing the prudential system of the sub-region in line with international standards and came in a context of previously initiated reforms for the harmonisation of rules relating to Basel Core Principles for effective banking supervision.

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Regarding the organisation of the governance of credit institutions in the CEMAC, the texts in force also require: (1) the preparation and publication of financial statements and, where applicable, consolidated financial statements under specific conditions; (2) the auditing of these financial statements by statutory auditors; (3) the establishment of an adequate risk management and internal control system and the definition of an appropriate remuneration policy (Massoud, 2014). These rules are linked to monetary policy. On the one hand, prudential aspects sometimes interfere with the conduct of monetary policy because of excessive risk-taking by intermediaries. On the other hand, BEAC (Banque des États de l'Afrique centrale) statutes often refer to a mission concerning the proper functioning of payment systems, or even the prudential supervision of credit institutions and the stability of the financial system, and in fact BEAC frequently gets involved in these areas. A financial dysfunction is reflected in a stronger differentiation of rate conditions according to the degree of commitment of agents in the riskiest activities. BEAC avoids setting reserve requirements at levels that would excessively set back credit institutions in relation to their foreign competitors and the financial markets.

With regard to the relationship between monetary policy and prudential supervision, the theoretical arguments in favour of the independence of each from the other (eliminate conflicts of objectives between

monetary policy and banking supervision, theoretical arguments in favour of independence (eliminating conflicts of objectives between monetary policy and banking supervision, giving more importance to market discipline) are counterbalanced by those against total separation (ensuring the safety of payment systems through liquidity management, preventing systemic risk through the role of lender of last resort) and, in practice, interdependent relationships between the institutions are more common than they appear (Duquesne, 1997). Moreover, as in the case of monetary policy, “independence from external and, above all, political pressures are an essential condition for effective banking supervision: this principle must be complemented by adequate coordination between banking supervision and monetary policy, whatever the institutional framework” (Trichet, 1994; Mishkin, 1996).

### EMPIRICAL STRATEGY

In this section, we present the empirical model by assessing how banks respond to the requirements imposed by the regulators, the estimation technique of the model and the data used.

#### *The empirical model: justification and specification*

The main hypothesis to be tested is that of the procyclicality of prudential regulation in the CEMAC. In other words, it is a matter of assessing whether, for the 2000-2018 period during which prudential ratios have been progressively strengthened by the COBAC (Central African Banking Commission), there is a negative and significant relationship between the development of these prudential ratios and the compliance risk of banks established in the CEMAC. We thus looked at the relationship between prudential ratios, the level of interest margins and default risk, using the simultaneous equation model, which comprises two equations the dependent variables of which are theoretically interdependent and vary simultaneously (Demirgüt-Kunt *et al.*, 2004). Following Ahrend *et al.* (2009), Carbo *et al.* (2009) and adopting the H statistic of Mueller *et al.* (2013), this bank reaction function takes the following form in equation (1):

$$\begin{aligned}
 \Delta \text{Comb}_{it} &= \alpha_1 X_{it}^k + \alpha_2 Z_{it}^p + \alpha_3 \Delta \text{Re } g_{it} + \alpha_4 \Delta \text{Risk}_{it} + \alpha_5 \text{Comb}_{i,t-1} \\
 &+ \mu_i + \varepsilon_{it} \\
 \Delta \text{Risk}_{it} &= \beta_1 X_{it}^k + \beta_2 Z_{it}^p + \beta_3 \Delta \text{Re } g_{it} + \beta_4 \Delta \text{Comb}_{it} + \beta_5 \text{Risk}_{i,t-1} \\
 &+ \mu_i + \varepsilon_{it} \\
 \varepsilon_{it} &= \rho \varepsilon_{i,t-1} + v_{it} \quad (1) \\
 \Delta \text{Comb}_{it} &= \text{Comb}_{it} - \text{Comb}_{i,t-1} \\
 \Delta \text{Risk}_{it} &= \text{Risk}_{it} - \text{Risk}_{i,t-1} \\
 \Delta \text{Re } g_{it} &= \text{Re } g_{it} - \text{Re } g_{i,t-1} \quad (2)
 \end{aligned}$$

Equation (2) represents the observed changes in the level of banking competition, the risk taken by the bank and the prudential ratios respectively, as a function of the desired levels for country  $i$  at time  $t$ .

$$Comb_{it-1}, Risk_{it-1} \text{ et } Reg_{it-1} \quad (3)$$

The factored terms in equation (3) are respectively the discretionary changes in bank competition, in risks taken by the bank and in prudential ratios that are proportional to the difference between the desired and observed levels in period  $t-1$ . This means that the observed changes are a function of the desired levels, the lagged variables and the random shocks  $u_i$  and  $\varepsilon_{it}$  respectively. The desired levels of banking competition, risk taken by the bank and prudential ratios are not directly observable but are assumed to depend on a group of observable variables describing the financial condition of the bank and the state of the economy in each country.  $X$  the macroeconomic characteristics of the countries,  $Z$  the macrofinancial and managerial variables of the bank,  $u$  the specific impact of each bank,  $\varepsilon$  the error term that captures the financial shocks.

This specification is consistent with studies that look at individual countries or a group of countries collectively (panel studies). Several indicators are used to measure banking competition (net interest margin, overheads and cost/income ratio, etc.). However, some of them have been the subject of much criticism. Overheads and the cost/income ratio, for example, are considered to reflect the outcome of competition policy and are endogenously affected by the actions of competition authorities (Dietsch, 2005; Degryse *et al.*, 2008). Like most of the literature on bank competition (*Comb*), this article focuses on the gap between the bank's lending rate and its refinancing rate. The interest rate cap leads to over-investment in services and an excessive number of new entrants, which fosters a risk of regulations being held hostage. The evolution of prudential standards (*Reg*) has been modelled according to a composite measure developed by Frison-Roche (2010) and Idot (2014), which is constructed from several microprudential and macroprudential indicators: the liquidity ratio (*Liqd*), the solvency ratio (*Solt*), the bank credit ratio (*Cred*), bank operating expenses (*Fgot*) and loan provisions representing the funds that banks set aside to cover non-performing loans. (*Prov*). Moral hazard theory predicts that a bank approaching the minimum regulatory capital ratio may have an incentive to increase capital and reduce risk. The aim is to avoid regulatory costs caused by any non-compliance with capital regulations (Drehmann *et al.* (2013).

A wide range of banking variables commonly used in the literature are introduced. The economic growth of real GDP per capita (*Cros*) and the inflation rate (*Inft*) to monitor the level of economic development of the country. The size of bank assets, as measured by the



Napierian logarithm of total assets (*Tail*), could influence competitive decisions and compliance risk. Large banks may have implicit insurance in that they are perceived as *too big to fail* and can therefore increase their asset risk. Recent empirical studies indicate that size induces higher risk (Mueller *et al.*, 2013)<sup>3</sup>. Staff expenditure measured by staff costs/total assets (*Frag*). We also add the bank's capital management (*Capt*) as an indicator of financial innovation, the banking penetration rate (*Banc*) indicating the network of the banking environment and the disclosure of information (*Ehob*) as a source of information production in the banking sector.

### *Technic estimation*

The goal of the estimation is to assess the impact of changes in prudential standards on compliance risk, considering competitive distortions and the components of non-compliance with the capital quota. First, we test the hypothesis that the constant term is the same for all banks using the Fisher test which shows that there is no reason to assume the existence of specific effects. This confirms that our panel structure is not perfectly homogeneous. Therefore, our model is either with fixed individual effects or random individual effects. The specification of these two effects according to the Hausman test (1978) indicates that the model that fits the structure of our sample is the fixed effects model. Furthermore, the White test indicates a lack of heteroscedasticity.

In dynamic panels, the simultaneous equations technique relies on the orthogonality conditions between the lagged variables and the error term, both in first differences and in levels. When the dynamic model is expressed in first differences, the instruments are in levels, and *vice versa*. In the model to be estimated, the use of lagged variables as instruments differs according to the nature of the explanatory variables. For exogenous variables, their current value is used as an instrument. For predetermined or weakly exogenous variables (variables that may be influenced by past values of the dependent variable but remain uncorrelated with future realisations of the error term), their values lagged by at least one period can be used as instruments. For endogenous variables, their values lagged by two or more periods can be valid instruments.

The system of simultaneous equations defined by equation 1 is estimated by the triple least squares (3SLS, three-stage least squares) method. The use of this estimation method is motivated by the fact that there is interdependence between the endogenous variables. Therefore, this method provides robust parameter estimates. Moreover, it is preferable to the double least squares (2SLS, two-stage least squares) method because it is a full information technique, i.e. it allows all parameters to be estimated simultaneously. Moreover, the 3SLS consi-

ders inter-equation correlations. Thus, using this technique, we obtain estimates that are asymptotically more efficient than those obtained by the 2SLS technique. This method, defined by Zellner and Theil (1962), takes the two steps of the 2SLS method and incorporates a third step consisting in applying generalised least squares to estimate all parameters  $\alpha_i$  and  $\beta_j$  simultaneously. The 3SLS method is based on the fact that it takes into account a probable correlation between the error terms (which are correlated with the endogenous variables) of the structural form of the model.

### *Data*

The basis for the estimation is data from the six CEMAC countries collected over the 2000-2018 period, i.e. a panel of 456 observations. It thus forms an unbalanced panel that makes it possible to exploit the spatial and temporal dimension of the data. They are taken from the World Bank's World Development Indicators (2018), the International Monetary Fund's (IMF) International Financial Statistics (2017), the BEAC's Activity Reports, the annual reports of the COBAC and the National Institute of Statistics (INS). Table 1 presents the descriptive statistics of the variables.

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**Table 1**  
**Descriptive Statistics of Compliance Risk Variables in the CEMAC**

| Variables           | Comments | Average  | Standard deviation | Minimum  | Maximum |
|---------------------|----------|----------|--------------------|----------|---------|
| $\Delta\text{Comb}$ | 456      | -0.01045 | 11.0148            | -102.821 | 104.121 |
| $\Delta\text{Risk}$ | 456      | -0.02670 | 16.0071            | -136.204 | 130.186 |
| Tail                | 456      | 15.42233 | 6.0276             | 7.109    | 33.987  |
| Capt                | 456      | 6.01873  | 2.7572             | 1.897    | 13.777  |
| Inft                | 456      | 3.89333  | 2.8832             | 1.101    | 12.987  |
| Banc                | 456      | 17.1989  | 7.2569             | 6.664    | 33.121  |
| Ehob                | 456      | 2.43762  | 0.5931             | 2.649    | 4.3018  |
| Cros                | 456      | 6.75203  | 0.4709             | 5.823    | 8.2197  |
| Frag                | 456      | 2.17472  | 0.7632             | 0.564    | 3.809   |
| $\Delta\text{Liqd}$ | 456      | 0.00883  | 4.0938             | -28.082  | 17.311  |
| $\Delta\text{Solt}$ | 456      | 0.00806  | 4.2622             | -47.109  | 38.242  |
| $\Delta\text{Cred}$ | 456      | 0.07862  | 6.1747             | -78.757  | 87.764  |
| $\Delta\text{Prov}$ | 456      | -0.00531 | 11.2846            | -81.988  | 75.943  |
| $\Delta\text{Fgot}$ | 456      | 0.01355  | 4.2722             | -34      | 29.88   |

Source: from the authors using Stata.

Banks operating under an uncertain environment have little information about borrowers seeking credit. Before starting the analysis of

the model and the econometric specification, we need to check the existence of multicollinearity between the independent variables (see Table 2 below).

The average of  $\Delta Comb$  over the period and for all banks in the sample is 1.04%. The average risk weighted solvency ratio is 0.81% and the average liquidity ratio is 0.88%. Recalling that banks must have a risk-weighted capital ratio of at least 8% and a risk-weighted liquidity ratio of at least 100%, we observe that CEMAC banks are sufficiently capitalised to cover the risks incurred. The change in credit for CEMAC banks is 7.86% and the change in provisions is 0.53%. The inflation rate averaged 3.89% for all CEMAC countries over the study period. The average variation of the financial sector in GDP is 14.3% in the CEMAC.

### *OUTCOME PRESENTATION AND ANALYSIS*

In this section, we present and discuss the results of the estimations of the different reaction functions of the banks in our sample of six countries over the 2000-2018 period. From the different estimates, we extract three main results.

#### *CEMAC banks must adapt to new competitive conditions without changing prudential standards*

Prudential standards act as a brake on unwarranted risk-taking by allowing banks to better adapt to the new deregulated and fiercely competitive environment. Banks that comply with regulations have a lower probability of compliance risk. This situation is characterised by a reduction in breaches of customer protection rules in the banking and insurance activities of bankers, thereby enhancing the stability of the banking system. This test corroborates the empirical results obtained by Kenkouo (2019) who shows that increasing competition in the banking market is possible by giving the general public enough information to compare not only products and services, but also banks. The information on pricing and competitive conditions that is available can serve as a basis for the regulator.

The various prudential ratios in Table 3 (below) have negative signs, indicating that, all other things being equal, any increase in these ratios (tighter prudential regulations) leads to a reduction in the level of banking competition. This outcome can be justified insofar as tighter prudential regulation, by severely affecting the organisation and activities of small banks forced to upgrade, may further increase the concentration of market shares around larger banks, thus limiting the level of competition in the sector. This result is contrary to that obtained by Andrea *et al.* (2012), who argue that stronger prudential rules improve competition conditions.

**Table 2**  
**Correlation of Compliance Risk Variables in the CEMAC**

|       |           | Correlations |           |           |          |           |           |           |           |          |           |           |          |       |       |
|-------|-----------|--------------|-----------|-----------|----------|-----------|-----------|-----------|-----------|----------|-----------|-----------|----------|-------|-------|
|       |           | ΔCONB        | TAIL      | INFT      | CAPT     | CROS      | BANC      | FRAG      | EHOB      | ΔRISK    | ΔLIQD     | ΔSOLT     | ΔCRED    | ΔPROV | ΔFGOT |
| ΔCONB | 1.000     |              |           |           |          |           |           |           |           |          |           |           |          |       |       |
| TAIL  | 0.0130**  | 1.000        |           |           |          |           |           |           |           |          |           |           |          |       |       |
| INFT  | -0.0511   | -0.2134      | 1.000     |           |          |           |           |           |           |          |           |           |          |       |       |
| CAPT  | -0.1632   | 0.0384**     | 0.0102*   | 1.000     |          |           |           |           |           |          |           |           |          |       |       |
| CROS  | -0.0104** | 0.5227**     | -0.0343   | 0.1300    | 1.000    |           |           |           |           |          |           |           |          |       |       |
| BANC  | -0.0364** | 0.1269**     | -0.1067** | 0.0506    | 0.0562*  | 1.000     |           |           |           |          |           |           |          |       |       |
| FRAG  | -0.0094   | 0.0270       | -0.1468** | 0.2889*   | 0.0577   | 0.1594    | 1.000     |           |           |          |           |           |          |       |       |
| EHOB  | -0.2863** | 0.4949**     | -0.1475** | -0.1106*  | 0.5310** | -0.2173** | 0.1981**  | 1.000     |           |          |           |           |          |       |       |
| ΔRISK | -0.1393** | 0.5224**     | -0.2667** | -0.0081   | -0.0320  | -0.2450   | -0.0551** | 0.1762**  | 1.000     |          |           |           |          |       |       |
| ΔLIQD | -0.1114** | 0.0058**     | 0.0773**  | -0.1587** | 0.1706** | -0.1069** | -0.0551** | 0.3219**  | 0.7109**  | 1.000    |           |           |          |       |       |
| ΔSOLT | -0.0468*  | 0.0300       | 0.0393    | -0.1050   | 0.0565** | -0.0029** | -0.0138   | 0.2390**  | 0.4563**  | 0.4109** | 1.000     |           |          |       |       |
| ΔCRED | -0.2288*  | -0.0015*     | 0.0642**  | 0.5153    | 0.0534** | 0.0039**  | 0.1603**  | -0.2552** | -0.2567   | 0.451    | 0.569***  | 1.000     |          |       |       |
| ΔPROV | -0.3113** | 0.0328**     | -0.0299** | 0.235642  | 0.0171** | 0.0786    | 0.0690**  | -0.2273   | -0.3519** | 0.2806** | 0.7613**  | 0.2713*** | 1.000    |       |       |
| ΔFGOT | -0.1282   | 0.0609       | -0.0455** | 0.3927**  | 0.0665** | -0.1493   | 0.1788**  | -0.2389** | 0.0117**  | 0.1498** | -0.1439** | 0.5321**  | 0.1245** | 1.000 |       |

Remark: \* significance of 1%; \*\* significance of 5%; \*\*\* significance of 10%.

Source: from the authors using Stata.

**Table 3**  
**Net Interest Margin and Banking Risk in the CEMAC (3SLS)**

| Variables           | Banking competition ( $\Delta Conb$ ) | Banking risk ( $\Delta Risk$ ) |
|---------------------|---------------------------------------|--------------------------------|
| TAIL                | -0.021483<br>(-1.25)                  | -0.370***<br>(-2.09)           |
| CROS                | 0.882***<br>(3.72)                    | 4.260<br>(0.11)                |
| INFT                | 0.024<br>(0.23)                       | -0.228<br>(-0.72)              |
| CAPT                | 0.079***<br>(2.36)                    | 0.981***<br>(2.11)             |
| FRAG                |                                       | -1.501<br>(-0.88)              |
| EHOB                | -0.002<br>(-0.41)                     |                                |
| BANK                | -0.033***<br>(-2.38)                  |                                |
| $\Delta CONB$       |                                       | -0.531<br>(-0.25)              |
| $\Delta RISK$       | -0.026<br>(-1.42)                     |                                |
| $CONB_{t-1}$        | -0.159***<br>(-4.42)                  |                                |
| $RISK_{t-1}$        |                                       | -0.173***<br>(-5.01)           |
| $\Delta LIQD$       | -0.065***<br>(-2.51)                  | -0.745***<br>(-2.93)           |
| $\Delta SOLT$       | -0.071***<br>(-2.93)                  | -0.632***<br>(-2.43)           |
| $\Delta CRED$       | -0.089***<br>(-3.74)                  | -0.765***<br>(-2.84)           |
| $\Delta PROV$       | -0.026***<br>(-2.05)                  | -0.502***<br>(-5.55)           |
| $\Delta FGOT$       | -0.071**<br>(-3.21)                   | -0.419<br>(-1.56)              |
| INTERCEPT           | -3.886**<br>(-2.43)                   | -20.964<br>(-1.15)             |
| N                   | 456                                   | 456                            |
| R <sup>2</sup>      | 0.531                                 | 0.577                          |
| $\chi^2$            | 77.47***                              | 106.71***                      |
| Number of countries | 6                                     | 6                              |
| Prov>F              | 0.0000                                | 0.0000                         |

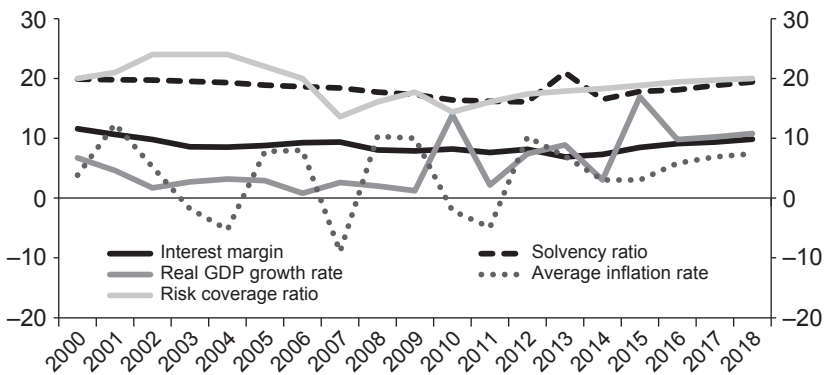
Note: \* significance of 1%, \*\* significance of 5%, \*\*\* significance of 10%.

Source: from the authors using Stata.

Indeed, it must be acknowledged that prudential rules affect banking players differently, depending on their size and level of organisation. In general, subsidiaries of large foreign banks adapt quickly to changes in prudential regulations, while smaller or predominantly locally owned institutions often struggle to adjust. This may eventually lead to a loss of market share for these smaller banks in favour of more adaptable banks. Similarly, Fischer (2013) shows that prudential standards are better equipped than bank customers to monitor pricing and identify undesirable practices. A high level of competition gives bank customers an advantage in choosing financial products and services and fosters the creation of high quality products and services that are both competitive and innovative (OECD, 2011). It appears that in the CEMAC area, the publication of pricing conditions contributes not only to consumer protection, but also to better financial inclusion and the promotion of competition in the banking sector. The dissemination of information (*Ehob*) improves competition and reduces the costs of financial services by 0.2%. Compliance within banks is therefore of vital importance for their autonomy in monitoring, analysing, and implementing the requirements expected by the various supervisory authorities to which their activities refer (see chart 1).

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**Chart 1**  
**Developments of the Regulatory Framework and Economic**  
**Situation in the CEMAC**  
 [%]

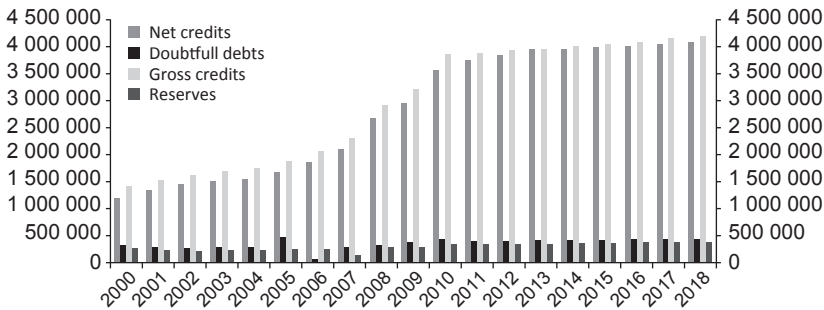


Source: from the authors based on WDI and COBAC data.

Solvency was generally satisfactory, and 43 banks had a risk coverage ratio of 8% or more. Similarly, 50% of banks did not comply with the risk-splitting standard that limits exposures to a single beneficiary to 45% of capital (COBAC, 2019). Thus, a higher level of these ratios is associated with a higher probability of default. This result, in line with

that obtained by Borio (2013), can be explained by excessive risk-taking. In addition, the increase in compliance risk may exist if the problem between shareholders and managers leads to excessive risk-taking or if regulators force the riskiest banks to build up a higher capital ratio depending on their activities, as shown in Chart 2 (Drehmann *et al.*, 2013).

**Chart 2**  
**Banking Activity Developments in the CEMAC**  
(in millions of CFA francs)



Source: from the authors based on COBAC activity reports (2000-2018).

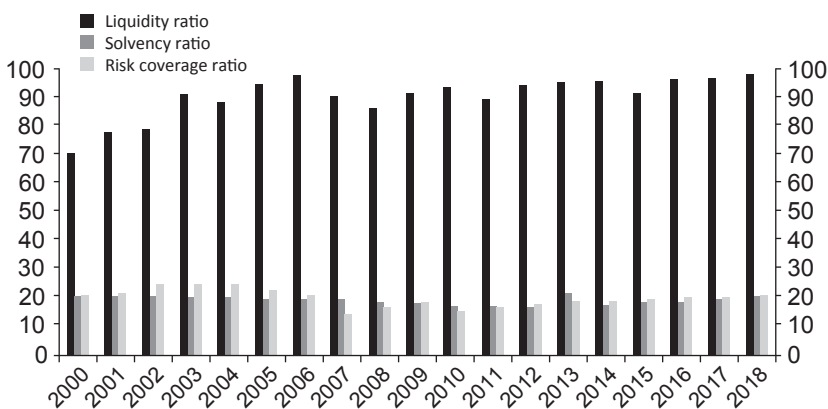
Despite CEMAC regulations considerably increasing the number of channels to access the pricing conditions of banks, they are still very difficult to access (Tankou *et al.*, 2019). When making a decision about a bank or a banking product, it is difficult, if not impossible, to access exhaustive information. Obtaining the bank terms and conditions is only one step. The content of these terms and conditions must also be understandable to customers.

*CEMAC banks that comply with prudential standards  
are protected from risks arising from their operations,  
particularly credit risk*

Banks with a higher bank lending ratio, all other things being equal, exhibit better risk management and therefore lower compliance risk. The credit granting activity is the one in which CEMAC banks have the best expertise. For this reason, the banks that are most active in this field have a 76.53% lower compliance risk. The coefficient for the ratio of equity to total assets (Capt) is positive and significant, meaning that at 98.10%, a higher ratio is associated with a higher risk of non-compliance. There are two possible interpretations of this result. Firstly, a very high level of deposits to assets indicates a low level of capital or equity and therefore a lower solvency. Secondly, for CEMAC banks, the stability of deposits is a source of moral hazard in terms of

asset substitution, the negative effect of which in terms of risk-taking more than offsets the positive effect linked to the stability of the resource. CEMAC banks that devote a relatively larger share of their asset value to staff costs have a lower compliance risk. With the evolution of prudential ratios (see Chart 3), banks allocate a significant share of staff costs to risk management, internal control or portfolio selection (Ginsburg, 2014).

**Chart 3**  
**Developments in Prudential Standards for Banks in the CEMAC**  
[%]



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Source: from the authors based on COBAC activity reports (2000-2018).

Larger size leads to 37.07% lower compliance risk for CEMAC banks. Diversification by size allows for economies of scale and scope. By increasing the size of their assets, large banks would benefit from better diversification and reduce their level of default risk. It should also be noted that most large banks in the CEMAC are subsidiaries of large pan-African or international banking groups, which generally have an organisation and rules that allow for strict compliance monitoring. Also, due to their size, these institutions are also subject to stricter supervision by the banking supervisor, which could therefore justify their low level of non-compliance. Also, the fact that banks have institutional support and greater proximity to political and economic decision-makers facilitates their access to large projects. This result is in line with that obtained by Gambacorta *et al.* (2013). The shareholder structure does not influence the compliance risk of CEMAC banks (Kamgna *et al.*, 2009).

High growth rates are associated with a lower risk of non-compliance. This result indicates not only that banks choose the least risky assets during periods of economic growth, but also that improved



income increases the ability of agents to meet their obligations (Garcia-Marco *et al.*, 2008). However, a growing share of the financial sector in GDP is a source of banking compliance risk. This result is also in line with our predictions, although it should be noted that the weight of the financial sector in the GDP of CEMAC countries is very different from that of developed countries that have been more extensively researched. Thus, the weight of bank loans in GDP is generally under 18% in CEMAC countries, while it is greater than 100% in OECD countries. There is no significant impact of inflation on bank compliance risk.

According to the work of Tchapga (2014), three main actions are taken by the compliance function. Firstly, the detection and prevention of compliance risk, consisting in the implementation of an internal and external monitoring system<sup>4</sup>, the development of a reference framework of obligations<sup>5</sup> and the development of a compliance risk map. Secondly, the treatment of compliance risk consisting of the implementation of a compliance control plan and the monitoring of compliance risk. Finally, communication on compliance risk to establish a compliance risk reporting mechanism as soon as possible.

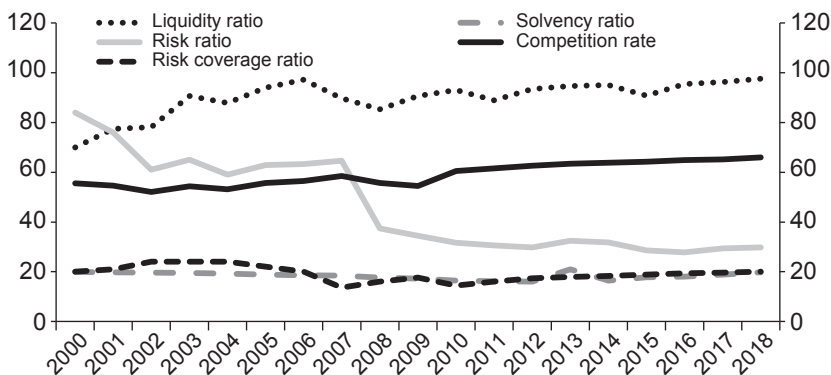
#### *A confirmed procyclical orientation of the prudential framework*

The extent of regulatory procyclicality is highlighted by our results through reforms that encourage risk-taking in banking behaviour, by making risky assets more costly in terms of capital (Andrea *et al.*, 2012). However, one concern with this regulatory stance is the pressure of minimum capital requirements on bank capital and hence on bank credit supply over the cycle (Danielson *et al.*, 2001). Regulatory pressure tends to increase by 22.8% during economic downturns, with credit levels increasing by 76.8% during periods of economic growth. To assess the procyclicality of banking activities in the CEMAC, credit quality and aggregates over the cycle must be studied. In times of economic downturn, eligible capital is negatively affected, as past provisions reduce profits with a build-up of credit loss reserves. As banks are capital constrained, they may have to limit their lending capability (Hellman *et al.*, 2002).

According to Aglietta (2011), capital requirements play a crucial role in aligning the interests of bankers with depositors and other creditors. Drehmann and Juselius (2013) highlight the dangers of increasing banks' sensitivity to risk and capital requirements, which could reinforce their procyclical behaviour. This is an attempt to externalise a large part of the risks off the banks' balance sheets to avoid the obligation to comply with prudential standards (see Chart 4 below). This outsourcing is done by taking advantage of financial innovations, such as the securitisation of receivables or through financial derivatives.

This leads to an increased diffusion of risks and their transfer to less supervised players such as institutional investors and hedge funds.

**Chart 4**  
The Evolution of Prudential Ratios and the Compliance Risk in the CEMAC [%]



Source: from the authors, based on COBAC activity reports (2000-2018).

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The risk coverage ratio, equivalent to the Cooke ratio, is at the heart of the CEMAC's prudential framework. The minimum requirement when the ratio was introduced in 1990, which is defined as the minimum ratio of capital to risky assets, was 4%. But very early on, banking supervisors felt the need to align with international standards that require a minimum of 8% for this type of ratio. Changes in this ratio do not include market risk. However, there is a rise in risks that feed into systemic risk because of the interlocking nature of financial relationships. Procyclicality is confirmed by the circumvention of prudential rules, which is characterised by financial innovation and quick technological development (Repullo, 2004). These help banks to strategically reposition themselves in relation to their competitors. As a result, banks are more willing to lend money when competition is weaker, thus consolidating the procyclicality of the banking industry. Such decisions have direct impacts on banks' performance, business management strategy, risk taking and capital mobilisation (Idot *et al.*, 2014).

The prudential framework is procyclical, forcing banks to trade-off between a system where they must hold a constant proportion of their loan portfolio in reserve and a more risk-sensitive system where they adjust their reserves according to the current risks associated with their loans (Borio *et al.*, 2001). In the first case, it is likely that the amount of reserves will be inadequate as they are too high in upward phases of the cycle and too low in downward phases. This system is not optimal from the banks' point of view: at the top of the cycle, the profitability of their

capital is reduced by the opportunity cost of unused reserves, but it is not optimal either from the regulator's standpoint, as the amount of reserves is insufficient when risks rise and occur at the trough of the business cycle (Arjani, 2009). In the second case, the advantage of regulation is that it is adapted to the management of current risk and the goal of banks to increase the profitability of their capital. The problem is that it encourages banks to adopt a procyclical credit policy, which translates into lending more in times of high cycle and less during lows.

The prudential framework favours the development of an unregulated shadow banking sector, which allows banks to offload the risks associated with the loans they provide (Scialom, 2011). Regulation puts banks at a disadvantage. However, it seems unlikely that the loss of market share by banks is due to capital requirements. State cash flow difficulties and greater difficulties for companies affected by the Covid-19 crisis would further threaten financial stability, [potentially] leading to major bank defaults (ECA, 2020).

### *CONCLUSION*

The aim of this article was to assess the impact of changing prudential standards on the compliance risk of CEMAC banks. We first set out the determinants of the compliance behaviour of banks in the CEMAC and their reaction to prudential standards. Second, we specified an econometric model that we estimated on a panel of 50 banks over the 2000-2018 period.

Four main results emerge. Firstly, compliance with some prudential standards remains low, but the disclosure of pricing conditions presents a lower probability of compliance risk. Secondly, banks with a higher bank lending ratio are more likely to value the compliance function than those with a relatively higher proportion of asset value spent on staff costs, and larger banks with stronger permanent controls display lower compliance risk. Thirdly, in the presence of asymmetric information, the decrease in the net interest margin leads banks to select the least risky projects to comply with prudential standards. Fourthly, a change in the level of risk leads banks to adjust their level of competition through an informational advantage over borrowers. The procyclicality of prudential regulation is amplified and the risk of non-compliance is weakened.

The ambition of CEMAC monetary authorities is therefore to contain systemic risk by limiting procyclical forces and sources of financial fragility. On a first level, an appropriate strategy would be to integrate into the measurement of credit risk certain macroprudential warning metrics that have been empirically demonstrated to predict

rising vulnerabilities and probabilities of future distress (such as the interbank lending/GDP ratio and competition). On a second level, we can aim to strengthen minimum risk provisions in periods of high economic activity, even though financial institutions tend to reduce them and rating agencies, in the same way, are not very sensitive to business cyclicity as long as it remains strong. On the other hand, such provisions should be allowed to decrease, within a certain limit, during slowdowns. The aim would therefore be to limit runaway effects and, above all, to strengthen future resilience when overall business conditions deteriorate.

This study suggests that compliance with prudential capital standards should be strengthened to avoid the duplication of large-scale compliance risk in the CEMAC. In addition, banks should continue to disclose pricing conditions that promote financial inclusion and provide the general public with sufficient information to compare not only products and services, but also banks. At the very least, banking supervision should focus on verifying the principle of compliance in all matters relating specifically to banking and financial activities, as part of the more general system of permanent internal control of operations. The compliance function should be independent and should comprehensively cover the compliance risk in the bank. Ultimately, the main contribution of this study is to have highlighted that the evolution of prudential standards influences the risk of non-compliance in relation to its business cycle. The regulatory landscape and the measures taken by governments at national level are expected to evolve rapidly (CEMAC, 2020).

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Possibilities of extending this study by considering bank governance variables and the determinants of the procyclicality of prudential ratios could be explored. Similarly, the analysis of the link between banking regulation and the behaviour of banks in relation to business cycles is a promising line of research.

## NOTES

1. CEMAC has been created in 1994 and gathers six countries: Cameroon, Congo, Gabon, Equatorial Guinea, Central African Republic and Chad.
2. The cost of capital is defined as the cost of investing in a project at an opportunity cost, which is the rate of return on the alternative use in the financial market under the same risk conditions, which must be forgone if the project is accepted.
3. In 2008, the largest US bank defaulted, calling into question the *too-big-to-fail* doctrine.
4. Monitoring is the instrument that allows the compliance function to identify any changes in the legal and/or regulatory environment (Carbo *et al.*, 2009).
5. A repository of obligations should be developed to identify and consolidate all legal and regulatory requirements with which the bank must comply (Wise, 2005; Dahan, 2009).

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## APPENDIX

**Table 4**  
**The Main Steps from Basel I to Basel II in the CEMAC**

|                   |  |
|-------------------|--|
| July 1988         | Adoption of the Accord on the measurement of capital standards ("Cooke ratio").  |
| November 1991     | Amendment to not include provisions on non-performing loans in the capital.  |
| December 31, 1992 | Implementation of the Cooke ratio.   |
| July 1994         | Amendment on criteria related to risk-weighted assets for OECD countries.  |
| April 1995        | Amendment to the bilateral netting of banks' derivative exposures.   |
| January 1996      | Amendment of the Accord to extend it to market risk.   |
| January 1998      | Agreement by the central bank Governors of the 10 countries to reform the 1988 Accord.   |
| June 3, 1999      | Publication of the first consultative document on a new capital adequacy system setting out the general framework of the reform. |
| January 16, 2001  | Publication of the second consultative document widening the scope of options.   |
| April 29, 2003    | Publication of the third consultative document finalising the proposals.   |
| May 5, 2003       | Publication of the results of the third impact assessment.   |
| October 11, 2003  | New proposal for the calibration of capital requirements, subject to consultation until 31 December 2003.                        |
| June 2004         | Publication of the final accord.   |
| December 31, 2006 | Implementation of Basel II.  |
| January 1, 2009   | Entry into force in the CEMAC area of the new regulation, including Pillars 2 and 3, applicable to all banks.                    |

**Table 5**  
**Changes in Decision Variables in the CEMAC**  
 (in millions of CFA francs)

| Characteristics          | Size    | Reserves  | Capital  | Provisions | Ownership interest |
|--------------------------|---------|-----------|----------|------------|--------------------|
| Cameroon                 | Average | 46 470.2  | 61 936.2 | 1 218 239  | 203 391.4          |
|                          | Max     | 2 626 223 | 104 654  | 213 548    | 601 847            |
|                          | Min     | 986 266   | 32 118   | 82 344     | 95 299             |
| Central African Republic | Average | 3 036.9   | 6 375.8  | 14 704.9   | 11 929.6           |
|                          | Max     | 4 436     | 29 222   | 18 900     | 17 662             |
|                          | Min     | 1 031     | 1 850    | 9 215      | 9 180              |
| Congo                    | Average | 3 719.7   | 13 203.2 | 2 165.9    | 32 552.1           |
|                          | Max     | 763 479   | 29 222   | 4 495      | 62 832             |
|                          | Min     | 273 665   | 1 850    | 0          | 8 481              |
| Gabon                    | Average | 1 081 964 | 91 861.8 | 45 964.8   | 106 972.3          |
|                          | Max     | 1 807 367 | 159 083  | 60 745     | 147 669            |
|                          | Min     | 681 336   | 59 399   | 21 242     | 10 543             |
| Equatorial Guinea        | Average | 401 047.3 | 9 687.7  | 14 894.4   | 36 470.6           |
|                          | Max     | 968 657   | 23 740   | 35 431     | 105 258            |
|                          | Min     | 61 794    | 2 740    | 2 651      | 10 543             |
| Chad                     | Average | 232 632.5 | 17 102.7 | 14 711.9   | 26 395.2           |
|                          | Max     | 385 481   | 3 543    | 17 215     | 44 258             |
|                          | Min     | 148 240   | 8 165    | 12 450     | 15 676             |

Source: from the authors based on COBAC activity reports (2000-2018).

**Table 6**  
**IMF Recommendations for CEMAC Compliance with Basel Core Principles**

| Principle   | Recommended action  |
|---|---|
| 1. Objectives, independence, powers and resources | Significantly increase the workforce at COBAC, preferably doubling it over the medium term. Strengthen its independence and diversify the composition of COBAC board members. Adopt rules for the liquidation of credit institutions.   |
| 3. Licensing criteria                             | Review the conditions for licensing credit institutions, executives and external auditors (especially the role of national finance ministers in issuing and withdrawing licences).  |
| 5. Acquisitions and investments                   | Impose an obligation to postpone proposed acquisitions to give COBAC the opportunity to challenge them or establish the rules of any such acquisitions.   |
| 6. Capital adequacy                               | Gradually raise the minimum capital adequacy ratio above 8%. Harmonise the regime (risk weights) with the Basel Committee recommendations.  |
| 8. Assessment of assets and provisions            | Gradually shorten the time frame before automatic provisioning is mandatory.  |
| 9. Large exposure limits                          | Reduce the large exposure limit from 45% to 25% in line with the Basel Committee recommendation. Remove the requirement for a 90% limit for certain companies of recognised strategic importance.   |
| 10. Monitoring of connected borrowers             | Broaden the definition of connected borrowers.  |
| 12. Market risk                                   | Establish a regulatory framework.   |
| 14. Internal control                              | Carry out the internal control inspections planned for 2006 and ensure that the follow-up confirms that the institutions comply with the regulations.   |
| 18. Stand-alone and consolidated checks           | Issue the necessary instructions for the application of the regulations on a stand-alone and consolidated basis.  |
| 22. Corrective measures                           | Ensure that COBAC applies its sanctioning powers to credit institutions, executives and external auditors in cases of serious breach. Consider the benefits of adopting an "automatic" licence withdrawal procedure for credit institutions that remain in a critical situation for too long. |

**Table 7**  
**Definition of All the Variables in the Empirical Model**

| Variables | Definitions  |
|-----------|--|
| Tail      | Banks may adopt different competitive behaviours, depending on their size (too big to fail) and specifically, their economies of scale. They are therefore assumed to be more competitive, as they undertake policies to gain market share.  |
| Cros      | Economic growth may cause the level of competition to vary according to prevailing economic fluctuations or cycles.  |
| Inftr     | Inflation increases competition among bankers depending on the depreciation or appreciation of money by varying the interest rate.   |
| Capt      | The bank's capital management can influence its capacity for innovation. The higher the capital, the stronger the incentive to innovate. However, the opposite effect can occur, as the regulation of bank capital may induce the bank to engage in anti-competitive practices by creating barriers to entry or by colluding to limit access to other banks.   |
| Frag      | Staff expenditure measured by staff costs/total assets.  |
| Ehob      | Disclosure of information will make it easier for banks to produce information (information asymmetry between borrowers and banks), which is a source of competition between banks.  |
| Banc      | Some regulations on network banking transactions tend to reduce the level of banking   |
| Conb      | The net financial margin between the interest rate that banks pay for their funds (deposits and borrowing) and the interest rate charged on loans. The lower interest margin may be the result of a lowering of barriers to entry and/or a more immediate focus on reducing costs to customers, both indicating greater competition between banks. This margin expresses the ability of each bank to charge above marginal cost. |
| Risk      | Credit risk refers to debt instruments for which it is not certain that they will be repaid when due, usually due to the poor financial standing of the debtor, and for which a provision must therefore be made.  |
| Liqd      | The liquidity ratio, following Basel I and II, is 100% within the bank, creating healthy competition in the banking sector.  |
| Solt      | The solvency ratio covers at least 8% of their total lending, promotes adequate supervision of banks, protects depositors, and reduces barriers to entry.  |
| Cred      | The bank lending ratio is the maximum amount of credit granted by banks. The more loans the bank grants, the more income it generates and the more competitive it becomes.   |
| Prov      | The provisions on loans reflect the low quality of the assets. If provisions are higher, this implies a high degree of competition.  |
| Fgot      | Banking operating expenses are the operating expenses on competitive behaviour which revealed that overly stringent regulations on barriers to entry hinder competition.   |

Source: from the authors.

# ABSTRACTS

AGUSTÍN CARSTENS

## Central Banks Adapt to New Challenges

The Covid-19 pandemic has put the spotlight on the key role of central banks in crisis management. Central banks have again demonstrated their ability to deal with systemic events by adapting their response. Central banks in advanced and emerging economies implemented an unprecedented set of measures, going far beyond those adopted during the financial crisis. These measures were aimed not only at stabilizing financial markets, but also at channeling credit directly to businesses and households. The difficulties and challenges are many and range from the emergence of new financial markets to better coordination of fiscal and monetary policies.

There is a consensus that self-insurance through the accumulation of foreign exchange reserves is not optimal. Similarly, there is little that countries can do to limit risk through protective measures in managing capital flows without forgoing the benefits of participation in the global financial system. In the absence of a comprehensive and well-funded global safety net, liquidity safeguards under the aegis of the central bank issuing the international currency will remain the primary protection (Carstens, 2021b). The best way to reduce the tension between fiscal and monetary policies is to increase sustainable growth. Achieving higher growth requires structural reforms, supported by growth-friendly fiscal policies. The independence of central banks is essential so that they can continue to focus on their core mandate of maintaining price and financial stability.

*Classification JEL: E40, E50, E52, E58, E60.*

FRANK SMETS

## Why Have Policy Rates Been so Persistently Low in the Euro Area?

Short-term rates have been negative in the eurozone since 2014. This paper demonstrates that the central bank has been constrained in its responses to a disinflationary environment after the financial crisis. The ECB's new strategy, adopted in July 2021, emphasizes a disinflation control objective. Will interest rates, which are in fact directed by the ECB, be able to evolve naturally at a level consistent with potential growth and the inflation target of around 2%?

*Classification JEL: E40, E50, E52, E58, E60.*

COMÉ POIRIER, XAVIER RAGOT

## A Qualified Defense of Functional Finance: Secular Stagnation, Growth and Inflation

The uncertainty about growth, the return of inflation and the need for an energy transition are renewing the economic policy debate. If the situation was previously

referred to as secular stagnation, other names are emerging: stagflation reflation. Beyond the diagnosis, what use should be made of monetary or fiscal policy in an environment of high debt? This issue is all the more important as the European rules of budgetary coordination are being questioned. Based on concrete examples, this article asserts the central role of fiscal policy in relation to monetary policy. This development should be understood as a rehabilitation of “functional finance” in a measured form. The implications for the mandate of central banks and the European fiscal framework are developed.

*Classification JEL: E40, E50, E52, E58, E60.*

PHILIP R. LANE

### **The Monetary Policy Strategy of the European Central Bank**

This article outlines the main features of the new monetary policy strategy of the European Central Bank (ECB). Under this strategy, the ECB is focused on stabilising inflation at 2% over the medium term. It takes a symmetric perspective on deviations from this target: overshoots and shortfalls are viewed as equally undesirable. At the same time, the strategy fully takes into account the implications of the effective lower bound: since there is an effective floor to policy rates, it is strategically necessary to also deploy interest rate forward guidance, asset purchases and targeted long-term refinancing operations to ensure that the inflation target is achieved. The new strategy also seeks to incorporate the implications of climate change and the carbon transition for macroeconomic and inflation developments.

*Classification JEL: E40, E50, E52, E58, E60.*

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RICHARD H. CLARIDA

### **The Federal Reserve’s New Framework: Context and Consequences**

This paper argues the ability of the new monetary policy frameworks established by the US Federal Reserve in 2019 and 2020 are adapted by the dynamic steering of inflation to the current challenges of an inflation recovery. These changes, which aimed at giving long-run objectives to monetary policy, have indeed major political implications.

*Classification JEL: E40, E50, E52, E58, E60.*

FRANÇOIS VILLEROY DE GALHAU, VINCENT BIGNON, BRUNO CABRILLAC

### **The Challenges of a More Demanding Environment on Monetary Policy**

Central bank policy has helped to overcome two major crises in the recent period. And if the adage that central banks cannot do everything remains true, it is nevertheless clear that central banks are now obliged to take an interest not only in the monetary pillar, but also in new categories such as the rise in public debts, the investments needed for climate change, the rise in inequality or the concentration of wealth, in short to broaden the criteria for stability through a monetary and financial analysis.

*Classification JEL: E40, E50, E52, E58, E60.*

OTMAR ISSING

### **New Monetary Policy Guidelines: Losing the Anchor?**

When assessing the question whether new doctrines, guidelines for monetary policy should be considered the experience of the past, mistakes or successes has to be analysed.

For example – what have we learned from the period of the “great moderation” in which an improved monetary policy played a major role? The Fed and the European Central Bank (ECB) have reviewed their strategies. Both central banks have changed their inflation target. Inflation targeting as such is widely seen as the optimal strategy. However, no model of inflation targeting exists so far that integrates the risks from the banking system and financial markets with all their dynamics, non-linearities and overall complexity. The “second pillar” of the ECB’s strategy can be seen as an approach to integrate these aspects into the process monetary policy decisions.

Controlling or more modestly guiding inflation expectations remains a major challenge for central banks. Forward guidance has become the main communication strategy to anchor inflation expectations. However, theory and practice have revealed severe problems of this approach. The expanding role of central banks has raised concerns about the independence of this institution. Overall, the role of central banks in society has to be reconsidered. Central bankers should not ignore the threat to their independence by involving themselves in political issues.

*Classification JEL: E40, E50, E52, E58, E60.*

DIRK SCHUMACHER

### **Reading Central Banks – Does Unconventional Blur the Picture?**

The effectiveness of central banks to fulfil their policy goals depends also on their ability to clearly signal their intentions to financial market participants and the general public. After all, monetary policy actions are transmitted via financial markets to the real economy and private households. In normal times, that is before the financial crisis, the short-term interest rate was the main tool to communicate the policy stance. Knowing where the short-term interest rate would go, would provide a good guide to where the central bank wants the economy to go. The addition of unconventional policy tools, such as outright purchases of financial assets, and a closer interaction between monetary and fiscal policy has made “reading” central banks more complicated for market participants. This in turn makes a stronger effort from central banks necessary to get their message across. Unfortunately, it also implies a higher risk of mis-communication and policy mistakes.

*Classification JEL: E40, E50, E52, E58, E60.*

STEPHEN G. CECCHETTI, KERMIT L. SCHOENHOLTZ

### **Limiting the Fiscalisation of Central Banks**

Since 2007, and especially during the Covid pandemic, central banks have expanded both the scope and scale of their interventions in unprecedented fashion, blurring the lines between monetary and fiscal policy. This fiscalisation endangers central bank independence, thereby weakening monetary policymakers’ ability to deliver on their mandates for price and financial stability. To find a way back to the pre-2008 division of responsibilities, governments must establish clearer limits on what central banks can and cannot do. To limit fiscalisation, authorities can do two things: commit to structural distinctions between fiscal and monetary policy, and articulate a balance sheet reaction function (analogous to a policy interest rate reaction function) that includes the reversal of crisis interventions when market functionality is restored. Having engaged in fiscalisation more than once, either by choice or by circumstance, central banks need to establish a framework that prevents repetition.

*Classification JEL: E40, E50, E52, E58, E60.*

ATHANASIOS ORPHANIDES

**The Fiscal Dimension of Monetary Policy and Central Bank Autonomy: Lessons from Two Crises**

Comparing and contrasting the Fed's and ECB's policy responses to the 2008 global financial crisis (GFC) and the Covid-19 pandemic 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. For the ECB, two critical changes in its policy response led to 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. 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. 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 low cost in the entire euro area, instead of only in selected Member States. This facilitated more expansionary fiscal policy that supported a more robust recovery, and protected against the further fragmentation of the euro area.

*Classification JEL: E40, E50, E52, E58, E60.*

SABINE MAUDERER, DAVID DÖHRMANN, JOSCHKA GERIGK

**Climate Change: What Role for Central Banks?**

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Greenhouse gas emissions do not cost anything to their emitters, so climate change is a good example of an externality: in their individual choices, economic agents do not sufficiently take into account the damage that their choices cause to the environment.

The Paris Agreement was a giant step forward, but it must be followed by rapid collective action. The transition to carbon neutrality requires a global effort from all sectors. This includes the finance industry, whose central role was first highlighted in Article 2.1c of the Paris Agreement, which calls for “financial flows consistent with a pathway to low greenhouse gas emission and climate resilient development” (UNFCCC, 2015). In other words, the financial system must play a key role in supporting economic transformation.

Climate change has implications for the missions and operations of central banks. Moreover, while the topic of climate change is relatively new to central banks, it is nevertheless a concept deeply rooted in their traditional mandates and therefore does not constitute a new doctrine or require its invention. Rather, it is a modern and timely interpretation of central banks' long-standing objectives, which primarily require them to preserve price stability and sometimes also to facilitate sustained growth, promote employment or preserve financial stability.

*Classification JEL: E40, E50, E52, E58, E60.*

MATTHIAS THIEMANN

**The Asymmetric Relationship of Central Banks to Market-Based Finance: Weighing Financial Stability Implications in the Light of Covid Events**

Central banks today operate as the backstop of a fragile and volatile market-based financial system, as evidenced by the recent financial instability in the context of the Covid-crisis. This article investigates the genesis of this position, tracing it to an



asymmetric program by central banks to prevent financial instability. Quick and resolute in moments of crises, this program is slow and hesitant, if not ineffective in moments of financial booms. This state of affairs is linked to the lacking control of central banks over the pro-cyclical behavior of non-bank financial institutions in the shadow banking sector, outcome of a fragmented system of governance which central banks share with market authorities. The Covid crisis and the subsequent large scale quantitative easing programs, undertaken to ensure the stability of this system of credit-intermediation, clarify the need for a fundamental re-regulation of this sector. If central banks are to continue to backstop this sector, as it looks likely to be the case, they need to request a substantial expansion of regulatory oversight and control. Absent such reforms, the de facto backstop will install moral hazard, inviting increased risk-taking in the sector.

*Classification JEL: E40, E50, E52, E58, E60.*

MICHEL AGLIETTA, NATACHA VALLA

### **The Sovereignty of Money and its Historical Transformations: the Invention of Central Bank Digital Money in the 21<sup>st</sup> Century and its Geopolitical Consequences**

The emergence of digital technologies threatens the sovereignty of money by opening up payment systems to non-bank players, the Bigtechs. These derive enormous rents from their monopolization of e-commerce platforms, including through the capture of consumer data. In the absence of any regulation, they exercise unfair competition vis-à-vis banks. Facebook's Libra project – now seemingly being sold –, purporting to establish a global currency under the control of a private monopoly, has caught the attention of monetary authorities and financial regulators. Apart from establishing regulations to restore competition in payment services, the assertion of monetary sovereignty within nations is leading to the emergence of central bank digital currency. This innovation appears at different speeds depending on the country. It comes in parallel to the disappearance of cash. In many countries by now, including China, provisions are made in the organization of payments to avoid destabilizing commercial banks.

The thorniest problem concerns the transformation of the international monetary system (IMS). Not a detail, the digital code that identifies central bank digital currency allows them to retain control of the cross-border use of the cash they issue. This fundamentally calls into question the principle of “dominant currency”. A reform of the IMS will have to follow with two possibilities: an accounting of the digital codes to establish a global synthetic currency or, more likely, the promotion of the digital SDR as the ultimate liquidity. This would, at last, establish monetary multilateralism by making the IMF the international lender of last resort.

*Classification JEL: E40, E50, E52, E58, E60.*

LAURENCE SCIALOM

### **The Societal Responsibility of Central Banks**

The societal responsibility of central banks echoes the social responsibility of companies. The difference in the term reflects the fact that central banks are responsible to society as a whole and not simply to the partners with whom they have contractual relations. In this article, we seek to decipher the forces at work in the deconstruction of the myth of a central bank solely dedicated to preserving the value of money and disconnected from major societal issues and debates. We develop the idea that since the financial crisis, central banks have been re-engaging their politics in the life of the city. We illustrate this assertion

through two intensely debated questions: on the one hand, the effects of monetary policy in terms of inequality and, on the other hand, the role of central banks in the ecological transition. Finally, we point out some unresolved issues regarding the social responsibility of central banks.

*Classification JEL: E40, E50, E52, E58, E60.*

PERVENCHE BERÈS

**The European Central Bank: What Accountability to the European Parliament, Corollary of its Independence in Order to Assure its Credibility and its Legitimacy?**

The development of monetary policy and the role of the ECB after 2007 reopen the debate on the conditions and modalities of its democratic accountability to the European Parliament. It was built from 1998 on the basis of the Maastricht Treaty; it has evolved in parallel with the institutional development of the ECB's responsibilities, but the rise of unconventional monetary policy, its side effects and the broadening of the interpretation of its mandate raise new questions.

*Classification JEL: E40, E50, E52, E58, E60.*

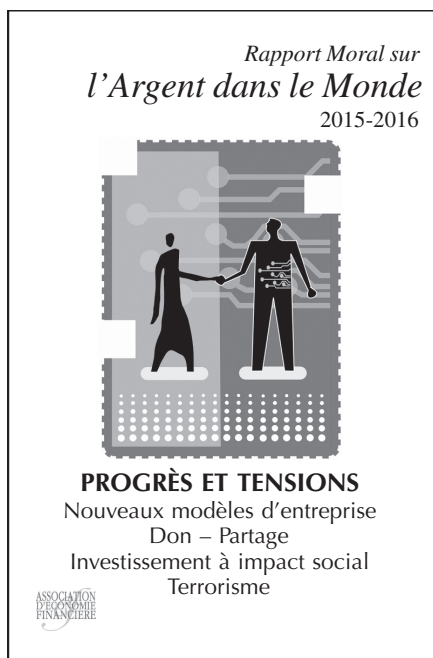
DÉSIRÉ AVOM, RODRIGUE NANA KUINDJA

**Does the Evolution of Prudential Standards Affect the Risk of Non-Compliance Banks in CEMAC Countries?**

In this article, we empirically analyze the evolution of prudential ratio from Basel I to Basel III and assess its effect on the level risk of non-compliance banks in CEMAC countries. To achieve this, we specify and estimate, with resort the method of simultaneous equations, over the period 2000-2018, several variants of the reaction function of commercial banks in dynamic panel on a sample of 6 countries of CEMAC region. Our results show, firstly, that the drop in the intermediation margin leads banks to select the least risky projects in order to comply with prudential standards; and, second, that a change in the level of risk constrains banks to adjust their level of competition through an informational advantage over borrowers. In addition, the procyclicality of prudential regulation is amplified while the risk of non-compliance is weakened.

*Classification JEL: E44, G21, G28.*

# Rapport Moral sur l'Argent dans le Monde 2015-2016



Le *Rapport moral sur l'argent dans le monde 2015-2016* traite de l'émergence de nouveaux modèles et de nouveaux comportements : ubérisation et, plus généralement, économie du partage sont en train de modifier le cadre de nombreuses activités ; la responsabilité écologique est intégrée dans un grand nombre de démarches. Les initiatives se développent et sont de nature à transformer les modèles d'entreprise : FinTech, économie sociale et solidaire ; les critères de l'investissement responsable et la prise en compte de son impact social se généralisent chez de nombreux acteurs tant en France qu'à l'étranger.

Ces évolutions porteuses de progrès interviennent paradoxalement dans un contexte plus noir : celui du terrorisme dont l'existence constitue en soi une donnée économique du fait des diverses formes de son financement, par son impact, ainsi qu'en raison des impératifs de la prévention.

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**Actualités**  
**Relancer la recherche financière :**  
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MIPHO II offre à nos lecteurs l'opportunité de la publication d'un rapport de MIPHO II financé par la recherche après MIPHO II. Ce point de vue est le 3<sup>e</sup> trimestre prochain et sera publié sur le site de la Société Française des Analystes Financiers.



**Actualités**  
**Pratiques durables : quelle stratégie des autorités financières européennes ?**  
L'Autorité européenne des marchés financiers vient d'adopter sa stratégie sur les pratiques durables. Ce sera l'ESG (European Financial Reporting Advisory Group) publie le premier rapport des European Lead Companies sur l'amélioration du reporting sur les risques climatiques. Les entreprises sont invitées à suivre de bonnes pratiques.



**Actualités**  
**Lecture du F&L : le SPAR examine les propositions de l'IASB**  
En décembre dernier, l'International Accounting Standards Board a publié un appel à commentaires sur le projet « General Foundation and Disclosure », également intitulé « Financial Reporting Classification » ou « Représentation des États Financiers ».



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**Du côté des émetteurs**  
L'audit financier se traite sur le marché européen  
Finlandia, l'éditeur principal de la SF-Ad, le 23 janvier, a été invité à participer au marché européen de la SF-Ad. Son objectif est de devenir une Agence de premier plan sur les marchés financiers et de fournir des services de conseil et de production de contenu pour le marché des investisseurs. Jean-Michel, l'ADCA, répondra aux questions à [analysefinanciere.org](http://analysefinanciere.org).

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