

# INTRODUCTION

## LESSONS LEARNED FROM CRISES

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### *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.

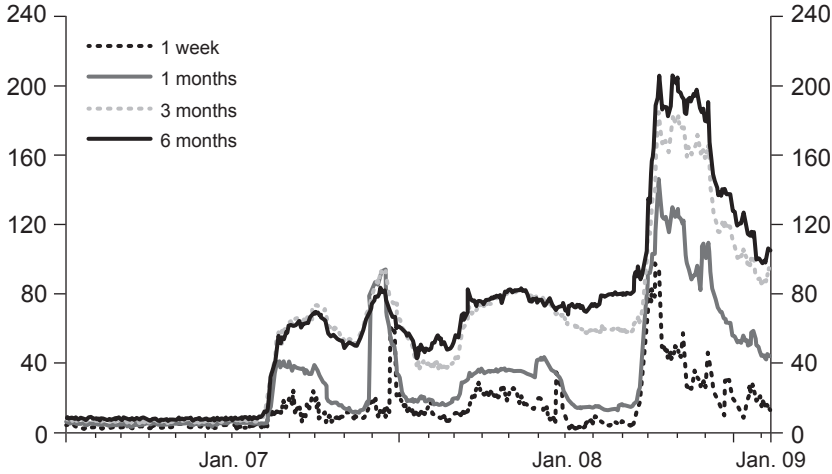
an intermediate objective (the exchange rate in that case), the BoE (Bank of England) chose to target an ultimate goal: inflation. Subsequently, during the 1990s, inflation targeting became the new mainstream, including in emerging market economies (Truman, 2003).

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.

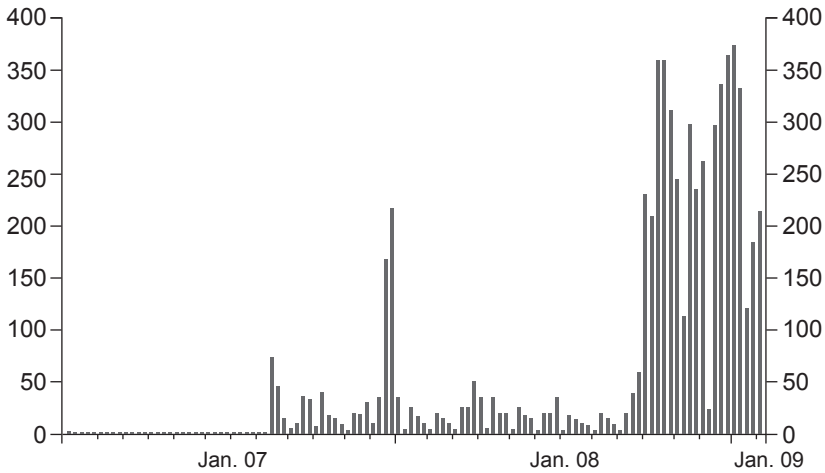
Debate means, strong counterarguments had much currency at the time. Of course, James Tobin defended forcefully a different view (Tobin, 1983). And Ben Friedman demonstrated the conceptual lacunae (Friedman, 1975; Friedman, 1994). As concerned *practical* implementation of monetarist policy, Alan Blinder 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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