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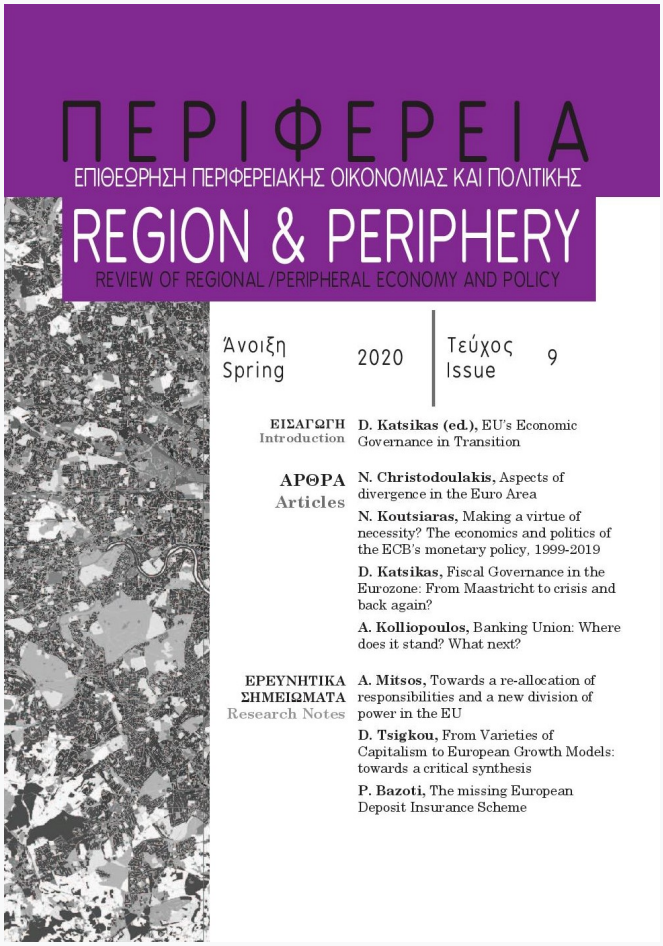

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Nikos Koutsiaras

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Making a virtue of necessity? The economics and politics of the ECB's monetary policy, 1999-2019

Nikos Koutsiaras[*], *Associate Professor*
National and Kapodistrian University of Athens

Abstract

The ECB could hardly afford political neutrality, even in the monetary union's "honeymoon phase". Being a stateless central bank entailed striking compromises between conflicting (national) monetary policy preferences. However, such compromises would often be reached at the expense of theoretical consistency and to the detriment of coherence in the ECB's monetary policy strategy. And, perhaps inevitably, they would also bear the mark of the dominant partner in the European Monetary System, that is prior to the establishment of the monetary union, now also being the biggest subscriber to the ECB's capital. Political neutrality and, for that matter, monetary activism on the part of the ECB -as well as liquidity in the euro-area- were largely inadequate during the euro area crisis, especially in its early phase. They were subsequently increased, but at a slow pace and in a preferential fashion, that is, largely to the benefit of the banking industry. Eventually, the ECB did try to make a virtue of necessity; yet, this could only go so far. Thus, the ECB has reluctantly become the only game in town, its reluctance being mostly associated with the overriding concerns of certain national central banks of the Eurosystem, most notably the Bundesbank; namely, ensuring monetary dominance, averting (at that time illusory) inflationary dangers, preventing moral hazard, enforcing structural reforms and, not least, fending off any, indirectly emerging, type of transfer union. Therefore, the ECB could have no great ambitions; its lonely game was unlikely to produce a medal-winning policy maker in the world championship of central banking.

KEY-WORDS: ECB, central bank independence, monetary policy, monetary policy strategy, transmission mechanism, zero lower bound, lender of last resort, investor of last resort.

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Την ανάγκην φιλοτιμίαν ποιούμενη; Η πολιτική οικονομία της νομισματικής πολιτικής της ΕΚΤ, 1999-2019

Νίκος Κουτσιαράς, *Αναπληρωτής Καθηγητής*
Εθνικό και Καποδιστριακό Πανεπιστήμιο Αθηνών

Περίληψη

Η ΕΚΤ δεν θα ήταν δυνατόν να παραμένει πολιτικώς ουδέτερη – ούτε καν στην διάρκεια της πρώτης και σχετικώς ανέφελης περιόδου της νομισματικής ένωσης. Είναι μια κεντρική τράπεζα χωρίς πατρίδα και τούτο συνεπάγεται την ανάγκη συμβιβασμών μεταξύ αποκλινουσών εθνικών προτιμήσεων νομισματικής πολιτικής. Τέτοιοι συμβιβασμοί επιτυγχάνονται, όμως, εις βάρος της θεωρητικής συνέπειας και της συνοχής της στρατηγικής νομισματικής πολιτικής. Και, αναπόφευκτα, αντανακλούν την επιρροή του κυριάρχου εταίρου στο Ευρωπαϊκό Νομισματικό Σύστημα, τουτέστιν πριν από την εγκατάσταση της νομισματικής ένωσης· αυτού που σήμερα καταβάλλει την μεγαλύτερη (εθνική) εισφορά στο κεφάλαιο της ΕΚΤ. Η πολιτική ουδετερότητα και, κατά την ίδια λογική, η προενεργός νομισματική πολιτική -όπως και η ρευστότητα- ήσαν ανεπαρκείς στην κρίση της ευρωζώνης, ιδίως κατά την αρχική φάση της. Ενισχύθηκαν κατόπιν, ωστόσο με βραδύ ρυθμό και τρόπο προτιμησιακό, δηλαδή, εν πολλοίς προς όφελος των τραπεζών. Η ΕΚΤ κάποια στιγμή, πράγματι, προσπάθησε να κάνει ό,τι μπορούσε -να κάνει την ανάγκη φιλοτιμία- όμως η δράση της δεν ήταν δυνατόν να παραγάγει μεγάλα αποτελέσματα. Η ΕΚΤ έγινε, διστακτικώς, ο μοναδικός πρωταγωνιστής. Οι δισταγμοί της απηχούσαν της ανησυχίες ορισμένων εθνικών κεντρικών τραπεζών, κυρίως της γερμανικής κεντρικής τράπεζας – και συνδέονταν με την επιβεβαίωση της νομισματικής κυριαρχίας, την παρεμπόδιση του (φαντασιακού) ενδεχόμενου πρόκλησης πληθωριστικών πιέσεων, την αποσόβηση του ηθικού κινδύνου, την προώθηση των διαρθρωτικών μεταρρυθμίσεων και, ασφαλώς, με την αποτροπή του ενδεχόμενου σχηματισμού, εμμέσως, μιας ένωσης μεταβιβάσεων. Η ΕΚΤ δεν θα μπορούσε να έχει μεγάλες φιλοδοξίες. Μπορεί να υπήρξε ο μοναδικός πρωταγωνιστής στη διαχείριση της κρίσης, όμως υπολειπόταν των άλλων μεγάλων κεντρικών τραπεζών.

ΛΕΞΕΙΣ-ΚΛΕΙΔΙΑ: ΕΚΤ, ανεξαρτησία κεντρικών τραπεζών, νομισματική πολιτική, στρατηγική νομισματικής πολιτικής, μηχανισμός μετάδοσης, κατώτατο μηδενικό όριο, δανειστής ύστατης καταφυγής, επενδυτής ύστατης καταφυγής.

1. Aspiring to be boring?

"Successful monetary policy should be boring. Successful central bankers should be seen as neither heroes nor villains, but simply as competent referees, allowing the game to flow."

(The Economist, 1999:36)

Twenty years ago, Mervyn King, former governor of the Bank of England, said that successful central banking is boring – being boring should be the aspiration of the Bank of England, he proclaimed in front of a delighted audience in Plymouth. Ten years ago, Eric Leeper, now at the University of Virginia, made a sharp contrast between monetary and fiscal policy: the former has achieved the status of science, whilst fiscal policy is still alchemy, its use (and misuse) being grounded mostly in politics, not economics (Leeper, 2010); the monetary policy-as-science view had earlier been articulated in Clarida, Gali and Gertler, 1999; however, a humbler perception is suggested in Blinder, 1997, esp. p. 17; and a strictly critical argument is made in White, 2013).

Surely, the financial crisis and the Great Recession have put such proclamations to rest. Instead of boredom, Sir Mervyn and his colleagues have felt both the anxiety and the excitement which are likely to arise when navigating uncharted waters. And they have found themselves very often criticised and accused of various sorts of things, apart from being boring. At the same time, the scientific authority of monetary policy has been seriously challenged as central banks have broadened their operational framework employing non-standard policy instruments which might have worked in practice, despite their being theoretically disputed.[1]

Yet, for the ECB, the second most powerful central bank in the world, boredom has mostly been akin to an "inaccessible ideal". The phrase was coined by Gerard Debreu in order to denote what theoretical physics had actually been for early economic theory and to describe how striving for that ideal grew into a strong stimulus in the mathematisation of economic theory and its scientific advancement (Debreu, 1991). Which brings us to the monetary policy-as-science issue, but only to question the relevance of that argument in the case of the ECB, regardless of the time and stage of the European monetary unification process. As a matter of fact, the monetary policy strategy of the ECB has seldom been free of controversies, obviously not during the negotiations on making the European monetary union and designing its central bank (James, 2012, esp. pp. 304-317), nor following realisation of the single monetary policy for the euro area. Although such controversies are technical in character

and content, they fundamentally reflect clashes of ideas (James, 2012; Brunnermeier et al., 2016). Yet, ideas about money and monetary policy are often demarcated along national lines and, thus, aligned to national interests and policy preferences. Notwithstanding the role of technocrats in resolving monetary policy disputes, a role that was prominent during the negotiations and has formally been exclusive -that is, institutionally independent- following the establishment of the single monetary policy, politics has implicitly, at least, thrown its weight around.

Feelings of anxiety and excitement had in all likelihood been prevalent amongst policymakers of the newly established ECB. Besides maintaining price stability *per se*, affirming their anti-inflationary credibility and upholding their reputation for effectively minimising the ECB's loss function had certainly been daunting tasks, albeit crucial in order to keep inflation expectations firmly anchored. Thus, during the first decade of the economic and monetary union -its nice decade, to borrow again a metaphor from one of Mervyn King's speeches-[2] a lot of ECB intellectual capital and institutional resources were spent in forging, calibrating and reforming its monetary policy strategy. Putting in place and adjusting its decision-making procedures and rules of conduct, whilst reinforcing the microeconomic foundations of the monetary union, had also loomed large in the ECB agenda.

In spite of the self-congratulatory and optimistic tone of official reports published on the occasion (for example, Commission EC, 2008), the tenth anniversary of the European monetary union marked the beginning of a nasty second decade -to make use of another metaphor-[3] associated with the global financial crisis and, in particular, the euro area crisis. The ECB has since, reluctantly is often said, been the only game in town;[4] or, so the argument goes. Yet, fending off the (twice) heightened risk of currency redenomination, ensuring financial stability and providing for macroeconomic stabilisation have called for the introduction of new -so-called unconventional, or non-standard- policy instruments as well as making intensive use of the existing -conventional, or standard- ones. Discretion has, for all intents and purposes, outweighed rules in monetary policy-making, whilst policy choices and realisation of trade-offs have inevitably involved an element of experimentation, thereby often producing unforeseen direct or side effects and giving rise to unintended consequences. Furthermore, the ECB has assumed hitherto untried, if controversial roles.

Therefore, the powers and capabilities of the ECB have been stretched to their limit and that has caused fierce disputes pertaining to the economic soundness and legal legitimacy of ECB policies. In case there had ever been a doubt, resignations of three German members of the ECB's Governing Council -two

of them being also members of its Executive Board- have clearly made evident that clashes of ideas and divergence of preferences as to the monetary (and the fiscal, for that matter) order in the euro area have been running deeper, much to the detriment of market and people's perceptions of the authority of the ECB. Thus, politics has, perhaps unsurprisingly, been making inroads into the politically independent realm of European central banking. Not only have leading politicians in some euro area countries been furiously critical of ECB policies, but they also have, somehow paradoxically, been alleging that the ECB has effectively compromised its independence. Perhaps again, for all its achievements and shortcomings the ECB should invariably -that is, on both positive and normative grounds- be treated as the manager of a stateless currency, a technocrat on paper but a politician of sorts in the real world, especially when things turn sour. However, such an arrangement may be destined to fail.

This paper elaborates on the aforementioned arguments, thereby developing a political economy perspective on the ECB's monetary policy and practice. Thus, in the next section an attempt is made to assess the role and appraise the performance of the ECB during the ten years following the introduction of the single currency. The third section deals with the response of the ECB to the global financial crisis and to the euro area crisis and its aftermath; it focuses on the functions undertaken, the instruments employed and the reforms put into effect, but also delves into the controversies surrounding the ECB's activist stance. The final section concludes; and it also touches upon the main issues relating to the ECB's monetary policy at the zero lower bound and the questions and dilemmas raised in redrafting the central bank's monetary policy strategy.

To that effect, the ECB and its monetary policy are placed, albeit cursorily, within the broader institutional context of the European monetary and economic union. Besides, neither assessing the role and the performance of the ECB thus far, nor advising on its monetary policy strategy henceforth could accurately and fairly be accomplished, unless attention was duly paid to the constraints built into the institutional set-up of the monetary union – but also, to the second-order incentives which might be likely to ensue.

2. Going by the book, with strings attached

"Some observers have criticised the strategy as 'asymmetric'. In other words, they argue that the Eurosystem is more concerned about inflation than it is about deflation… I reject this criticism. The use of the word 'increases' in the definition imposes a floor of at least zero for the lower bound… Let me state categorically, as I have often done in the past, that neither prolonged inflation nor prolonged deflation in the euro area would be deemed by the Governing Council to be consistent with the maintenance of price stability… Others criticise the 'prominent role of money' in our strategy… I do not agree with these criticisms of the role of money in our strategy. There is little doubt that monetary aggregates in the euro area exhibit a close relationship with inflation…"

(Willem F. Duisenberg, 1999)

The statutory objectives of the ECB are clearly prescribed in the Treaty on European Union – and the Treaty on the Functioning of the European Union. The ECB's primary objective is to maintain price stability. And provided that the objective of price stability is fulfilled -without prejudice to the objective of price stability, in Treaty language- the ECB can take into account growth and full employment – the ECB supports the general economic policies in the European Union with a view to contributing to the achievement of the objectives of the European Union, in Treaty language. Accordingly, the ECB is mandated to define and implement monetary policy for the euro area. Yet, in relation to other tasks, most notably safeguarding financial stability and prudential supervision of credit institutions, the ECB is only assigned a contributing role – but since 2014 the ECB has been entrusted with the role of banking supervision in the European Banking Union, thereby having been brought into line with several central banks' institutional and policy acquis.

The monetary policy strategy of the ECB was first announced by its Governing Council in October 1998, three months before the introduction of the euro. It entailed two interrelated aspects, namely definition of price stability and the framework for the analysis of price developments and risks to price stability; and thus, it also provided the skeleton for communicating the policy actions of the ECB, whilst allowing for the ECB being held publicly accountable in a comprehensive way. Specifically, the Governing Council adopted a quantitative definition of price stability as a year-on-year increase of below 2% in the Harmonised Index of Consumer Prices for the euro area as a whole, at the same time placing emphasis on the medium-term orientation of the monetary policy of the ECB – however, precluding intentions to depict the medium-term orientation as a fixed term horizon.

Yet, the most distinguished aspect of the monetary policy strategy of the ECB was its so-called two-pillar framework for the analysis of price developments and risks to price stability. The first pillar attributed a prominent role to money, thus echoing the fundamental conception of the quantity theory of money: in the long term, inflation and, for that matter, deflation are monetary phenomena. In that vein, a guideline for the growth of a broad monetary aggregate -in particular 4.5% annual growth of M3- was also endorsed by the Governing Council. In parallel to the monetary pillar -but not quite on a par, at least by way of nominal ordering- a second pillar was inserted within the analytical framework. Thus, price developments and risks to price stability were (also) appraised on the basis of (other than monetary, but not preset) economic and financial indicators, that is, measures of causally relevant economic and financial variables. In that sense, the second pillar reflected the New Keynesian approach to monetary theory and macroeconomics.[5]

The monetary policy strategy of the ECB was carefully explained. The quantitative definition of price stability was thought to strengthen the ECB's accountability since it implied that the ECB would have to explain contingent deviations of inflation from its own benchmark. And that was also deemed to provide for better anchoring of medium and long-term expectations (Issing et al., 2003). Furthermore, the medium-term orientation of the ECB's monetary policy was highlighted for its properly taking into account the variable and at times protracted lags in the transmission of monetary policy shocks, thereby ditching excessive policy activism and motivating the ECB to act in a forward-looking fashion (Hartmann and Smets, 2018). Besides, focusing on the medium term would enable the ECB to appropriately respond to supply shocks, especially oil price increases, as it effectively directs attention to the second-round (wage and price) effects of such price increases, whilst averting virtually unwarranted policy actions which might also induce volatility and threaten employment and output stabilisation. As a matter of fact, it had already been shown that, regardless of the specification of the objective of price stability -whether it is a price level target or an inflation target- a prolonged policy horizon amounts to a higher weight on output stabilisation (in the reaction function or the loss function of a central bank), (Smets, 2003; also Svensson, 1997).[6]

Turning to the two-pillar analytical framework, it was maintained that, by giving prominence to the role of money and on account of money's medium to long-term neutrality, the medium-term orientation of the monetary policy of the ECB was practically ascertained. Furthermore, monitoring the growth of money -maybe, alongside other monetary indicators- was thought to provide timely indication of risks to financial stability; besides, asset price inflation and, in par-

ticular, asset price bubbles can destabilise economic activity and threaten price stability (Issing et al., 2003). Hence, focusing on monetary developments could, in theory, prompt the ECB to adopt a leaning-against-the-wind policy stance – yet, there has been no evidence that the monetary policy of the ECB has ever taken that course of action (Hartmann and Smets, 2018).

The two-pillar analytical framework allowed for harnessing information on both long-term price movements -propelled by money growth- and high frequency movements of inflation -driven by supply and demand developments and, thus, being the subject of analysis within the economic pillar. In other words, the two-pillar framework allowed for cross-checking of long and short-term determinants of inflation, thereby advancing on the conventional practice -including the time horizon- of projection, and possibly ensuring that the monetary policy of the ECB is on the right track (Issing et al., 2003). Lest it be understated, the two-pillar framework and, in particular, the prominent role of money should, perhaps primarily, be conceived as a form of collateral pledged in order for the ECB to borrow the Bundesbank's credibility for price stability (more on that later) – and/or as evidence of the unrivalled influence of German and other like-minded central bankers.

For all its rationalization, the monetary policy strategy of the ECB was not indubitably justified. Mainstream academic criticism -not least from macroeconomists attesting to the New Keynesian "divine coincidence" conception of inflation targeting (Blanchard and Gali, 2007)- drew attention to various shortcomings in the ECB's quantitative definition of price stability. Thus, reliance on the Harmonised Index of Consumer Prices was found to impart an upward bias in the (so measured) headline rate of inflation – although the actual rate of inflation might well be lower. On top of that, the core (or underlying) rate of inflation was thought to (more) accurately reflect medium to long-term price developments, by filtering out of headline inflation volatile food and energy prices, computational misgivings notwithstanding. More importantly, the 2% ceiling in the definition of price stability -associated with the lack of a lower bound- was said to be inherently asymmetric, thereby giving rise to the risk of undesirably low inflation, if not outright deflation (see *inter alia* Wyplosz, 2003; De Grauwe, 2005, esp. chapter 8).[7]

Besides asymmetry as such, the 2% ceiling was deemed to be very low, or for that matter, excessively aggressive owing to various considerations. Thus, downward nominal wage rigidities, perhaps related to both employees' and employers' distaste of nominal wage cuts, imply that some inflation -maybe higher than the ECB's 2% ceiling- is conducive to easier reduction of real wages, thereby providing for a speedier adjustment of the economy to shocks (Akerlof et al., 1996). Moreover, inflation differentials within the euro area are wide and

persistent. Therefore, in countries inhabiting the low end of the distribution of inflation rates the unpleasant effects of downward nominal rigidities -mainly unemployment- could be magnified, whereas in countries residing in the upper end of the distribution there is a substantial risk of inflationary dynamics becoming entrenched. What is more, asymmetries across the countries of the euro area exist both with regard to the macroeconomic shocks to which countries are exposed and in respect of the transmission of monetary policies. Thus, reliance of interest-rate setting decisions on monetary union-wide data only -that is, lack of accounting for national inflation and output gap projections- could result in sub-optimal monetary policies (De Grauwe and Sénégas, 2003) – thereby, also reinforcing the growth of inflation differentials (more on that later). Last but not least, the 2% ceiling may fall short of safeguarding against the event of interest rates hitting the zero-lower bound.

Criticism was directed towards the prominent role attributed to money, monetary analysis and, ergo, the two-pillar analytical framework of the ECB's strategy too. Fundamentally -that is, at the level of theoretical foundations and empirical observation and largely echoing Keynesian ideas- doubts were raised with regard to the definition of money and the M3 approximation, the (assumed) stability of money demand and the predictability of price developments on the basis of broad monetary aggregates, to mention but a few – arguably, the main points at issue. Additionally, the two-pillar framework, in particular the monetary pillar, was said to function poorly when it comes to communicating the ECB's stance. That was ascribed to misinterpretations being given rise to (for example, concerning the exact meaning and scope of the reference value for the rate of growth of M3). And it consequently was pinned on noise being effectively imported, thereby distorting the public's understanding and markets' perception of ECB's signals.

In their detailed analysis of the ECB's monetary policy during its first twenty years, senior ECB officials Philipp Hartmann and Frank Smets (2018, esp. pp. 14-17) explain *inter alia* the central bank's reactions to macroeconomic and monetary developments and risks in the course of the ECB's first interest cycle or, the first business cycle managed by the ECB – to borrow the two co-authors' dual characterisation of the period January 1999-June 2003. The main factors driving business cycle fluctuations in the euro area -and main issues of concern for the ECB- consisted in volatility in global financial markets, variations in oil and import prices, movements in the euro exchange rate, and (uncertainty inciting) geopolitical tensions. Thus, in response to changing macroeconomic conditions -in essence, inflation and output forecasts- the ECB's monetary policy moved through phases of loosening and tightening. More concretely, the interest rate on the main refinancing operations (the ECB's main policy rate) was re-

duced from 3% to 2.5% in April 1999,[8] whilst a series of interest rate increases were engineered between November 1999 and October 2000, by that time bringing the main policy rate to 4.75%. Yet, those interest rate increases were later more than offset. Indeed, between September 2001 and June 2003 the ECB cut its policy rates by a total of 275 basis points; as a result, in June 2003 the main policy rate was brought to a then historic low level of 2%.

During those first four and a half years of the ECB, price stability -at least in the ECB's own definition- was mostly maintained. As a matter of fact, in early 1999 inflation rates were very low, even reaching levels lower than 1%. That was largely accounted for by the earlier disinflationary policies which, alongside fiscal consolidation, were earnestly pursued by member states' authorities in order to meet the convergence criteria, thereby becoming eligible to adopt the single currency (Praet et al., 2019). Subsequently, though, average annual inflation rose and peaked at 3% in early 2001, on the back of strong output growth and, also, reinforced by a rapidly depreciating euro exchange rate. Following concerted foreign exchange interventions by the ECB, the Fed and the Bank of Japan in September 2000, the euro exchange rate appreciated considerably, whilst the growth outlook took a turn for the worse. Thus, although average annual inflation hovered slightly above 2% from 2000 to mid-2003, no inflationary pressures were seriously contemplated. As a matter of fact, long-term inflation expectations were evidently drifting down and, with interest rates having fallen to a historically low level, the risk of nominal interest rates hitting the zero-lower bound was unlikely to be dismissed in academic and policy debates (Praet et al., 2019; for an early identification and analysis of that risk in the then prevailing economic circumstances, see Krugman, 1998).

The first business cycle managed by the ECB was thought to contain enough evidence that the ECB did acquire (the much sought after) anti-inflation credibility (Hartmann and Smets, 2018). Leaving aside the definitional nuances and the theoretical, empirical and policy-focused controversies surrounding the issue of anti-inflation credibility (see Forder, 2004 and references therein; for a closely related argument see Posen, 1995), one might, yet, question such an unqualified verdict. Not only was the emerging risk of a liquidity trap likely to turn the objective of anti-inflation credibility on its head -at least, to foster perceptions of that being the case- but the intellectual integrity and persuasiveness of the ECB's claim of anti-inflation credibility might also be cast in doubt in view of the inconsistencies pertaining to the central bank's implementation of monetary policy. What was primarily at issue was the real role attributed to money -and the actual relevance of monetary analysis- in the ECB's practice. For instance, money growth (M3) in excess of the reference value was no deterrent to the

ECB's lowering of policy rates in April 1999, whereas it was argued to dispel the case for further interest rate cuts in 2003. But, if the coherence of the ECB's monetary policy was disputed, one might also wonder whether the achievement of price stability reflected the competence and, for that matter, the credibility of the central bank. One might, instead, consider that the job of the ECB -admittedly, of other central banks too- was being made much easier with increasing globalisation (on the disinflationary effects of globalisation, see Pain et al*.,* 2008; also Rogoff, 2003); or, that luck had simply not been scanty.

The 2003 review of the monetary policy strategy of the ECB was an attempt to address such criticisms. It led to two main changes. First, the objective of price stability was redefined – clarified, in the ECB's jargon. Thus, the Governing Council would aim at a yearly inflation rate of below but close to 2% over the medium term. Second, the (prominent) role of money -the monetary pillar- would be downgraded. That was reflected in the decisions to end the annual review of the reference value for M3 and restructure the introductory statements of the President at the monthly press conferences on the ECB's monetary policy, thereby putting economic analysis ahead of the monetary analysis. Those changes were mostly welcome by academic economists advocating inflation targeting. By redefining the objective of price stability, it was reckoned, the risk of undesirably low inflation was curtailed and the probability of the nominal interest rates hitting the zero-lower bound much lowered. Downgrading the role of money growth was also consistent with empirical evidence on instability in the demand for money; also, fluctuations in M3 growth were evidently not linked to medium-term price developments (Hartmann and Smets, 2018, p. 18).

Besides, borrowing the Bundesbank's anti-inflation credibility was likely to be no longer needed. If "credibility is won through systematic, coherent action" (Issing, 2005, p. 71), the ECB had probably done its bit. After all, the establishment of the monetary union was no less than a major regime change associated with almost pure (Knightian) uncertainty in regard to the structural properties and the statistical regularities describing the euro area and fed into the ECB's economic model (Rostagno et al*.,* 2019). And the 2003 review was precisely an attempt to remove remaining contradictions. Yet, downgrading the role of money growth also meant that a formal excuse for opting for a leaning-against-the-wind approach, in case there was a risk to financial stability, was effectively relinquished. What is more, the 2003 review did little to address inflation differentials across the euro area countries. One could thus argue that, at that time, it mostly catered to the preferences of the low-inflation countries of the core of the euro area. Alas, the 2003 review also marked the beginning of a period of growing financial and macroeconomic imbalances (2003-2007).

Indeed, the thorniest issue -arguably, those espousing the theory of endogenous optimal currency areas would not use that or any synonymous adjective- was that of sizable and persistent inflation differentials between euro area economies (Darvas and Wolff, 2014).[9] Such differentials may be caused by temporary factors, primarily including divergent cyclical developments and dissimilar fiscal policies, as well as structural factors, in particular the so-called Balassa-Samuelson effect. The latter attributes inflation differentials to diverse productivity trends between the tradable and the non-tradable sectors; and it relates such productivity trends to economic convergence across euro area countries. Hence, the Balassa-Samuelson effect describes an equilibrium process. Regardless of their underlying cause, inflation differentials and the associated current-account disruptions are mitigated via adjustments in the real exchange rate (Koutsiaras, 2005, esp. pp. 44-5). Yet, structural imbalances are ultimately remedied as a result of investment capital flowing into the (higher-productivity) tradable sectors in lower-income euro area countries (Koutsiaras and Manouzas, 2016).

As previously mentioned, not only inflation differentials *per se*, but broader and deeper asymmetries across the euro area countries imply that the ECB should not exclusively rely on monetary union aggregates when setting its policy rates; it should also pay sufficient attention to the relevant national (macro-)economic indicators. In a similar vein, discussion is often made on the appropriate, yet implicit, country weighting scheme in the ECB's reaction function -that is, the weighting scheme for national policy-rate preferences- in order for the loss of monetary autonomy to be less costly and national business and inflation cycles to be better synchronised. This is an empirical matter; still, the literature remains inconclusive (an attempt at estimating implicit country weights in the ECB's reaction function is made in Sturm and Wollmershäuser, 2008; see also Pereira and Tavares, 2019). It is no less a political question, pitting the preferences of the high-income, low-inflation, surplus countries -in effect, the core countries- against the preferences of the low-income, high-inflation, deficit ones – in effect, the peripheral countries. That being the case, the ECB's monetary policy could neither be optimal for all, nor actually depoliticised.

No doubt, redressing inflation differentials and current-account imbalances depends, to no small extent, on (national) fiscal policies. Thus, it hinges on fiscal stability, including compliance with the numerical rules of the Stability and Growth Pact and countercyclical fiscal policy;[10] and, in general, it bears on the quality of public finances (for a conceptual and empirical analysis of the quality of public finances in EU member states, see Barrios and Schaechter, 2008). Yet, redressing inflation differentials and current-account imbalances crucially relies

upon market processes and qualities, comprising responsiveness to demand and supply shocks and efficient resource allocation. The former refers to domestic product and labour market flexibility. The latter relates *inter alia* to European market integration, in particular, financial integration coupled with -rather uncoupled from in practice- effective regulation and supervision of financial markets and banks. There is a twofold question at this point: does the ECB have any, mostly auxiliary or indirect, role to play in those policy areas and, accordingly, how has it actually fared?

As a matter of fact, communication on fiscal policy and structural reforms has evidently been a standard practice in central banking – although the literature has largely dealt with communication of monetary policy to financial markets and the public (Blinder et al*.,* 2008). That should cause no big surprise, once account is taken of the, often, positive thrust of central banks' statements on fiscal and structural policy. Indeed, the stance of monetary policy is partially shaped by fiscal policy and market adjustability – and economic agents and the public need to be informed to that effect. However, the ECB's communication on fiscal policy and structural reforms has been more frequent -and heavier- than that of the other major central banks; and, perhaps unsurprisingly, the ECB's pronouncements on fiscal policy have largely been normative in nature – preaching the benefits of cutting deficits (Allard et al*.,* 2012).

Yet, the ECB has never contemplated the option of providing (monetary) stimulus for coordinating national governments' policies to enrich the quality of public finances and implement structural reforms, thereby giving teeth to so-called soft -and rather ineffectual- methods of coordination being then in place. More precisely, the ECB has never signaled any intentions to accommodate reforms, on the condition of their being credibly implemented; or, in today's parlance, it has never committed itself to future reform-accommodative actions, in the way of state-contingent forward guidance (on the latter, see Samarina and Apokoritis, 2020). In fact, the ECB has explicitly ruled out such a case.[11] Yet, in so doing it has ignored both economic theory and political economy thoroughly pointing to the contrary – and that, without prejudice to the objective of price stability (Koutsiaras, 2001).

On the other hand, the ECB has been instrumental in fostering financial integration, and with good reason. Financial fragmentation would preclude the convergence of prices of same-risk assets across euro area countries, thereby perpetuating the divergence in nominal interest rates for similar firms and, given inflation differentials, exacerbating differences in real interest rates (Darvas and Wolff, 2014). Not only would the transmission of monetary policy be impaired, but, much worse, asymmetries across euro area countries would be

growing further, thus making costlier the loss of (national) monetary autonomy and further driving apart business and inflation cycles. On top of that, resource (especially capital) allocation across euro area countries would seriously be distorted, thereby undermining convergence dynamics.

Fostering financial integration was, in principle, justified and desirable. However, the ECB was overly optimistic that higher and deeper, yet poorly regulated, financialisation would both provide for the efficient allocation of capital across euro area countries and economic industries and allow for the monetary policy getting optimal and better transmitted. Underlying that optimism was the ECB's -and many other central banks'- attesting to the efficient market theory and subscribing to its policy implications. Hence, the risks of irrational exuberance and asset-price inflation were practically discounted and the perils of financial dominance neglected (on the latter, see Dietsch et al., 2018, pp. 63-71). Thus, one can partly explain why, as time went by, the ECB virtually turned a blind eye to money-growth trends when setting its policy rates,[12] the formally advanced reasons notwithstanding. Furthermore, the ECB's actual distaste for a leaning-against-the-wind policy can accordingly be interpreted. This very argument might also go some way towards explaining why the ECB was, in the first place, assigned a secondary role only in matters of financial stability and prudential supervision of credit institutions. Besides, the ECB was eagerly promoting the cause of financial markets' self-regulation (Fontan, 2018, p. 166).

In fact, the ECB threw its weight alongside the European Commission in pushing for the liberalisation and unification of national repo markets, as a remedy for financial fragmentation. And, pursuant to that end, the ECB adapted its own collateral framework in accordance to -and in a sense complementing- the provisions of Directive 2002/47/EC on financial collateral arrangements (for a detailed account, see Koutsiaras and Manouzas, 2016). That led to government bonds being treated as risk-free, regardless of national origin, in repo transactions with the ECB, thereby encouraging investment in peripheral euro area bonds. As a result, the prices of peripheral euro area bonds increased and their yields went down; nominal interest rates across euro area countries converged, interbank lending expanded and euro area banks' balance sheets grew exponentially; besides, substantial capital flows took place from core euro area banks to peripheral economies.

However, not only were such capital flows sizeable -and the balance sheets of banks oversized- but they were largely used in funding the peripheral economies' non-tradable sectors, be they governments or construction industries. Thus, peripheral euro area countries were afflicted with the so-called Dutch disease,

whereby the equilibrium process described by the Balassa-Samuelson effect was virtually reversed (Koutsiaras and Manouzas, 2016). Private and/or public debt in peripheral countries reached unsustainable levels and economic and financial imbalances, including asset-price bubbles and too-big (and interconnected)-to-fail banks, were built-up. In the words of Dietsch et al. (2018, p. 61), "[t]he combination of those factors set the Eurozone up for the perfect storm when the financial crisis hit", resulting *inter alia* in interbank lending being frozen and government bonds of peripheral countries being dumped – and their yields sharply increasing.

3. Turning unconventional: Meanings and labours, gains and losses

"I proposed an analogy, to associate the "standard" measures with the ethic of conviction and the "non-standard" measures with the ethic of responsibility. It is equally important to preserve integrity between intention and action, and between action and consequences. Our 'separation principle' proposes a way to preserve both."

(Jean-Claude Trichet, 2011)

"The concept of "monetary policy transmission" is fundamental to the activities of a central bank, i.e. the process by which changes in the benchmark rate of interest of a central bank are transmitted through the financial system to the real economy."

(Mario Draghi, 2012)

The period of so-called Great Moderation -and unhidden, but largely unappreciated global and European imbalances- came to an abrupt end. Mainstream macroeconomic theory was evidently found wanting. Thus, central banking had to find its own way through a global credit crunch, huge financial landslides and the greatest recession since the Great Depression of the 1930s. Sooner or later, monetary policymakers needed to improvise; but whether it was sooner rather than later did surely make a difference. Doubtless, the challenge for the ECB was even tougher. In Europe, the financial crisis developed into an economic, political and institutional crisis when financial investors betted on the creditworthiness -or lack thereof- of several euro area sovereigns, thereby threatening the integrity of the monetary union. And the ECB is the manager of a stateless currency. Monetary dominance in the euro area is realised over decentralised fiscal policies which are institutionally (cf. the Stability and Growth Pact) Ricardian in character, but often manage to escape the scripture.

During the early phases of the crisis, the ECB's monetary policy was guided by the so-called separation principle: interest rates were set in order to boost demand and bring the rapidly falling level of prices back to its (below but close to 2%) objective; and provision of liquidity aimed at addressing severe tensions in the interbank and other short-term money markets. Thus, from October 2008 to May 2009 the ECB lowered its policy rate by 325 basis points (from 4.25% in July 2008 to 1% in May 2009); it provided credit to (even creditworthy) banks which failed to secure funding in financial markets at (market) rates close to zero from early 2009. Provision of liquidity was

Initially realised via the main refinancing operations (cf. fixed-rate full allotment policy); and following the collapse of Lehman Brothers, longer-term refinancing operations (LTROs) were also introduced – and later re-introduced. Most importantly, the collateral requirements were substantially eased (and/or the range of eligible assets that could be pledged as collateral expanded). Furthermore, a covered bond purchase programme (CBPP) was implemented in July 2009 -and repeated twice, in 2011 and 2014- aiming at stabilising markets for those securities, thereby easing banks' refinancing problems. Thus, demand for liquidity on the part of sound credit institutions was virtually met in full, thereby allowing for the restoration of longer-term interbank lending commitments (Honohan, 2019, pp. 90-91).

It is true that the ECB was bold enough in those lending-of-last-resort actions, whilst the Bank of England and the Fed were initially hesitant and/or effectively constrained in their liquidity- management initiatives (Brunnermeier et al., 2016, p. 326). And, probably as a result, tensions in financial markets eased and spreads -capturing risk differentials across maturities of interbank unsecured lending commitments- stabilised, albeit at levels higher than before the crisis (Praet et al., 2019, pp. 97-98). However, that can only go so far in proclaiming the glory of the ECB during the early phase of the crisis (as argued in Brunnermeier et al., 2016, pp. 325-326). In fact, the Fed reduced its policy rate earlier than the ECB and in a more aggressive manner; from October 2007 to December 2008 the policy rate was reduced by 450 basis points (from 4.75 in September 2007 to 0,25% in December 2008). Also, in December 2008, the Fed launched its forward-guidance policy and asset-purchases programme, thereby embracing a much proactive approach.

Furthermore, it has been argued that the beneficial effect of the ECB's supply of liquidity was mostly related to the provision of dollars procured via swap operations with the Fed and channeled towards European banks struggling to refinance their short-term unsecured dollar debt (Mody and Nedeljkovic, 2018). What is more, whereas the ECB's euro liquidity operations helped to allay dis-

tress in financial markets, they fell short of reviving the bank-lending activity – and economic activity at large. As a matter of fact, demand for loans remained weak, whilst banks were also not eager to supply, which is a typical manifestation of a (corporate and household) balance-sheet recession (the concept is analytically founded in Koo, 2011). Thus, seeking to maintain their profitability, European banks used the ECB liquidity to embark on carry-trade operations. In the peripheral euro area countries, especially, banks used the ECB-supplied liquidity to buy their own government bonds, which paid a relatively high interest rate. Bond spreads were slightly reduced, but the banks-sovereign (lethal) nexus was at the same time deepened: not only were banks increasingly exposed to sovereign risk, but sovereign default premia were also pushed up (Mody and Nedeljkovic, 2018). Such carry-trade operations on the part of European banks were unsurprisingly reinforced as new (very) long-term liquidity-provision measures were put into effect (Fontan, 2018, p. 175).

By May 2010 sovereign bond markets in peripheral euro area countries were becoming increasingly distressed. Thus, in parallel to its lending-of-last-resort operations in support of the banking system, the ECB took up an investor-of-last-resort role in virtually illiquid secondary sovereign-bond markets via its securities markets programme (SMP), (the investor-of-last-resort concept is introduced in Caballero et al*.,* 2019). Henceforth, the (national) central banks of the Eurosystem were enabled to make large-scale purchases of sovereign bonds in secondary markets. Yet, the fact that the SMP was formally claimed to repair the monetary-policy transmission mechanism did little to appease those concerned about the programme's legal, financial and political-economic implications (for a description of the various channels through which the transmission mechanism was likely to be impaired, see González-Páramo, 2011). German central bankers, in particular, were seriously worried that the SMP was practically equivalent to (legally prohibited) monetary financing and/or a transfer-union-through-the-back-door device;[13] and that, in general, it was prone to inducing moral hazard (Honohan, 2019, p. 87). Such arguments were also raised regardless of the (stipulated) weekly sterilisation of the liquidity injected via SMP purchases, the sole purpose of which was to ensure the ECB's commitment to price stability. Those very arguments were going to resurface forcefully when the investor-of-last-resort actions of the ECB were advanced in size and scope.

Inflation nutters -alternatively hawks- would soon realise that they had very little, if any, reason to worry. Notwithstanding the transmission-mechanism justification of the SMP programme, the ECB was still holding fast to the separation principle. Thus, in April 2011, the policy rates were increased by 25 basis points and, contrary to what could prudently be expected, a further 25 ba-

sis points increase was introduced three months later. Perhaps, those inclined to side with the ECB, for intellectual, institutional or other reasons, would offer some justification for the first policy-rate increase. Inflation was at that time likely to reach 3%, by virtue of potential second-round effects of a recent surge in energy prices. Nevertheless, economic recovery was very weak and, for a large part of the euro area, hardly in sight. Thus, one may probably reflect that the April 2011 rate increase was rather premature (Honohan, 2019, pp. 91-92).[14] The July 2011 increase, though, was totally incomprehensible. The financial crisis in the periphery of the euro area was escalating, economic growth prospects were downgraded and fiscal consolidation was fully in force. The euro area was surely in need of monetary easing. Yet, the ECB's diagnosis was that monetary policy was too accommodative; and that inflation expectations had to be kept firmly anchored, thereby entailing an increase in policy rates (Mody, 2018, p. 296).[15]

Mainstream monetary theorists would find it almost inconceivable – and modern monetarist theorists simply beside the point; still, students of the political economy of central banking would plausibly argue that the SMP initiative was traded for forestalling the slightest risk to price stability. The politics of the ECB's monetary policy were thus made evident; for all its sophistication, financial and economic analysis, by itself, could seldom win the race. What is more, though, the ECB stepped into the politics of the euro area at large, whereby the interests of creditors were pitted against the interests of debtors, across and within euro area countries; and it clearly chose sides.

Martin Sandbu, an economics leader writer for the *Financial Times,* has eloquently narrated the euro area's self-inflicted damage. The latter was caused by universal fiscal austerity, ill-advised monetary policy and zombie banks exacerbating the credit crunch. And it resulted in a double-dip recession (2011-2013) and an exit from the single currency -and the threat coming thereof- being no-longer incredible (Sandbu, 2015, pp. 106-138). As Sandbu bluntly writes, "[a]t the root of all this lies the refusal to accept that debts that cannot be paid, will not, and it is worse to pretend they will -even from the point of view of collecting as much as can be had- than it is to try to manage their restructuring in an orderly manner. From that error flawed the colossal mistakes that the eurozone would go on to make, ranging from Greece and Ireland early on to the damaging stand-off with Greece in the spring of 2015" (p. 137).

Since the beginning of the euro area crisis, the ECB was adamant that debts, be they government or private, should be fully honoured. Regardless of authoritative academic opinion and International Monetary Fund (IMF) advice, Jean-Claude Trichet, at that time president of the ECB, was fiercely opposing the idea of a partial default on Greek debt in order to make the Greek economic

adjustment programme sustainable and socially less costly. And he persistently demanded that the Irish banks' solvency be restored with taxpayers' money, instead of asking creditors (bondholders) to bear losses. Part of the explanation is surely ideational: the ECB wanted to uphold (policy and institutional) credibility, safeguard investors' confidence and avert moral hazard. The ECB was almost fully in principle, and quite often in practice, aligned with German policy preferences – but that was about to change to some extent as the time went by. Interestingly though, Jean-Claude Trichet did his best to kill off a plan for "orderly insolvency" sponsored by German Chancellor Merkel and French President Sarkozy (the so-called Deauville agreement, October 18th, 2010). At the same time, he championed the idea of automatic sanctions being imposed on fiscal sinners, although the German government had already abandoned its earlier demands to that effect (Mody, 2018, pp. 273-276).[16]

What was primarily at issue was the ECB's concern to preserve the stability of mostly French and German banks at that time exposed to Greek sovereign bonds; and, generally, to alleviate the losses incurred by private financial institutions exposed to risky assets – alas, via socialising such losses. At issue was also the ECB's aversion to the risk of its balance-sheet incurring losses, thereby putting its independence at risk too (on the subject of a central bank's loss of capital and the financial, economic and policy implications, with emphasis to the Eurosystem, see Buiter, 2008). The ECB's worries about the health of its balance sheet were mostly incited by its SMP purchases rather than its open market operations.[17]

Thus, it may cause little surprise that the ECB kept on opposing the restructuring of Greek government debt, regardless of the euro area governments' unanimously agreeing, in May 2011, on the partial write-down of Greek sovereign debt. Private sector involvement (PSI) -as was euphemistically called- entailing the voluntary, in name, participation of private sector creditors, was part and parcel of a second rescue programme; and it was only agreed upon when it became evident that the Greek government could no longer service its debt. However, Jean-Claude Trichet threatened that the ECB would stop accepting Greek bonds as collateral in the central bank's open market operations. It took time to specify the details of the Greek PSI and, finally, in March 2012, it was decided that the face value of bonds held by private creditors (in total, 200 billion euros amounting at that time to 60% of the Greek sovereign debt) were to be cut by half. Meanwhile, the

ECB had given its assent, but only after it was made whole via a separate debt exchange exclusively held for the central bank – a choice that would later prove unwise (Sandbu, 2015, pp. 140-144).

Collateral policy and, especially, conditionality were the main means employed by the ECB in order to ensure that its liquidity-providing (last-resort) interventions would reinforce -rather than weaken- governments' policies to lower default risk. Yet, they were also the means for the ECB's blurring the boundaries between monetary and fiscal policy and even posing a challenge to (national) democratic politics. Thus, the eligibility of Greek bonds -issued or fully guaranteed by the Greek government- used as collateral in the ECB's refinancing operations was made conditional on the government's implementing fiscal austerity and structural reforms, in exchange for a rescue loan and the purchasing of Greek government bonds on the part of the ECB (cf. SMP). To put it precisely, a waiver of minimum credit requirements for Greek bonds was put into effect in April 2010, lifted in February 2015, following the newly elected leftwing government's rift with its creditors over the pace and the size of fiscal austerity measures, and reinstated in June 2016, following the government's capitulation.[18]

As a matter of fact, the ECB's conditionality policy -and politics- took different forms. Firstly, being a member of the Troika supervising the implementation of the economic adjustment programmes for Greece, Ireland, Portugal and Cyprus, the ECB put itself into an awkward position, at least to the informed observer's eyes. It both provided liquidity support and took part in assessing the conformity of governments' fiscal and structural reforms to the prescribed benchmarks, thereby also authorising the disbursement of rescue loans. The legality and legitimacy of the ECB's role in the Troika were questioned (Fontan, 2018, p. 171), yet the Troika would survive such challenges.

Secondly, conditionality was applied unofficially -and intensely for that matter- via the SMP operations. The governments of Portugal (prior to its May 2011 economic adjustment programme), Italy and Spain (with no programmes) were evidently pressed hard to put fiscal and structural reforms in place. Letters were sent to that effect by the ECB to the governments, the pressure being severe on the government of Italy. It took the form of making Italian sovereign bond purchases strictly conditional on the implementation of reforms, regardless of the alarming increase in yield spreads on Italian sovereign bonds. Yet, the ECB made vast purchases of Italian sovereign bonds only after the recalcitrant prime minister Silvio Berlusconi resigned – so much for the unintended consequences of the ECB's actions (Brunnermeier et al., 2016, pp. 334-336; Fontan, 2018, p. 172).

Perhaps, from a technical point of view, emergency liquidity assistance (ELA) could -indeed, should- only carry little political weight. ELA is provided at the discretion of national central banks to credit institutions pledging collateral that fails to meet the eligibility requirements in open market operations; and provision of ELA often comes at a high rate of interest. What is more, ELA implies no

risk-sharing. Risk is solely undertaken by national central banks -and potential losses are accordingly borne- whereas in open market operations risk is inherently shared across the Eurosystem – and potential losses are thus mutualised. Nevertheless, the ECB's Governing Council can veto, with a two-thirds majority, a national central bank's provisioning of ELA. That was initially justified on the grounds of maintaining a well-functioning transmission mechanism of monetary policy. Following the establishment of the single supervisory mechanism (SSM), the Governing Council's role could also be directly justified on the grounds of upholding the criterion of solvency of banks receiving liquidity assistance.

The ECB's Governing Council made use of its veto power in the cases of Ireland (November 2010), Cyprus (March 2013) and Greece (July 2015). Yet, in all three cases technical justification was in short supply – to say the least, it was contradictory. The Irish government was threatened that ELA would no longer be available, unless plans for a policy of "burning the bondholders" were totally abandoned and, what is more, an economic adjustment programme for Ireland was promptly negotiated and, then, fully implemented. Legitimate or not, the ECB's concerns for its balance sheet were clearly far-fetched; what mattered most was capital adequacy of European private banks exposed to Irish banks' debt (Sandbu, 2015, p. 100). Yet, dictating policy to the government -the letter sent by Jean-Claude Trichet to Finance Minister Brian Lenihan was testament to that purpose- went far beyond the ECB's mandate (Honohan, 2019, p. 245).

Whereas in Ireland the ECB's threat aimed at forcing the government to bail out banks, in the case of Cyprus the ELA weapon was used in order to force the government to bail in creditors and restructure Cypriot banks – and only on that condition could an economic adjustment programme be concluded. Indeed, this was a "stunning trajectory" for the ECB (Sandbu, 2015, p. 151). It was shocking, though, that the ECB -along with the IMF and the European Commission- approved, by way of concession to the Cypriot government, that resolution and restructuring of the two Cypriot banks be virtually put aside and that, instead, a one-off levy be charged, albeit differentiated, on both big and small deposits. In doing so, the ECB acquiesced in a choice that would in all likelihood dent the credibility of deposit insurance across the euro area, technical excuses notwithstanding (p. 152). The plan was rejected by the Cypriot parliament and a new plan, going in the right direction, was finally put in place – but that is beside the point.

The ECB's use of ELA in Greece was different in form; and it was profoundly political. The ECB, at that time headed by Mario Draghi,[19] did not cut off banks' access to ELA, nor did it lower the amount of emergency liquidity potentially provided by the Bank of Greece. Yet, it refused to increase the amount of ELA, which at that time stood at 90 billion euros, following the newly elected Greek

government's announcement, in June 2015, of a referendum on the terms of a third adjustment programme. The ECB did so regardless of massive deposit withdrawals from Greek banks – whilst in May 2012, when withdrawals were lower, the amount of Greek ELA had reached 125 billion euros. However, such a decision was hard to justify. In October 2014, the ECB, acting in its new capacity as bank supervisor, had considered Greek banks to be solvent. On the other hand, had the ECB now reasons to reconsider that verdict -for example, because the banks-government nexus was getting deeper and, especially, more worrisome-[20] it should have called for resolution of insolvent banks and restructuring of the banking system (Koutsiaras and Manouzas, 2016). Yet, the ECB shied away from that dilemma. It virtually had no other purpose than forcing the government to agree on the terms of a third adjustment programme. In July 2015, the government gave in to the demands of its creditors, alas overring the outcome of the referendum – but, again, that is beside the point.

Back in November 2011, while the euro area's self-inflicted damage was unfolding, Mario Draghi succeeded Jean-Claude Trichet to the presidency of the ECB.[21] A revision of monetary policy was largely justified, at least on the grounds of empirical evidence and other central banks' successful practice; and on political grounds too. Thus, the interest rate increases of April and July 2011 were reversed, by cutting policy rates by a total of 50 basis points in November and December 2011. Furthermore, in December 2011 and February 2012, two very long-term refinancing operations (VLTROs), with a maturity of three years and the option of early repayment, were conducted, grossly amounting to 1 trillion euros. Funding constraints were thus relaxed for banks, but that did not -and could not- have substantial effects on the non-financial sector's activity. Besides, in the absence of conditionality, banks could use the ECB's money just to repair their balance sheets, potentially transferring risk to the balance sheet of the central bank, as well as engage in carry-trade. Last, the range of eligible collateral was further expanded and the minimum reserve ratio reduced.

Safe prediction: Mario Draghi's "whatever it takes" speech and his announcement in September 2012 of the Outright Monetary Transactions (OMT) "emergency facility" will always find a place in financial historians' narratives of European money. OMT did not literally constitute an open-ended commitment on the part of the ECB; no lender-of-last-resort-to-governments role was thereby assumed by the central bank. Only shortly maturing -up to three years- sovereign bonds of crisis countries could be purchased in the secondary market, provided the country in question had access to private funding or embarked on an economic adjustment programme sponsored by the European Stability Mechanism (ESM) – and, for that matter, unanimously agreed. Formally, OMT was justified

on the grounds of enhancing transmission of the stance of monetary policy. And it was made explicit that potential risks to price stability would be taken care of. Thus, amongst others, the liquidity created via OMT would be fully sterilised (ECB, 2012; for a skeptical view about the impact of OMT sterilisation, in itself, on inflation, see McMahon et al*.,* 2012).

For all the ECB's promise to deploy its balance sheet heavily, the separation principle was not eliminated (for a different view, albeit qualified, see Rostagno et al. 2019, p. 15); and revision of monetary policy was still devoid of vigour. Part of the reason might be hostility to OMT on the part of the Bundesbank's president Jens Weidmann; his testimony to the German constitutional court, which was asked by a group of professors to rule OMT illegal, provided solid evidence to that effect.[22] Perhaps, slowing down the pace of cutting policy rates -from December 2011 to November 2013, the main policy rate was cut by 75 basis points in total- was an attempt to assuage Bundesbank's (falsely prompted) fears of inflation expectations being de-anchored.

This argument is mostly political rather than technical in nature. The other German member of the ECB's Governing Council (and former advisor of Wolfgang Schäuble), Jörg Asmussen, was one of President Draghi's allies in pushing for OMT. And he had the German government's backing to that effect. Granted, the German government had firmly endorsed Mario Draghi's initiative implied in his "whatever it takes" speech – subject, of course, to strict conditions being applied therein (Brunnermeier et al., 2016, pp. 354-337, p. 355; also, Sandbu, 2015, p. 160). The German government's support to the OMT programme was obviously endogenous to two major institutional reforms pursued at the same time; namely, the establishment of ESM in October 2012 and the decision by euro area governments in June 2012 to put SSM in place, in order to break the nexus between sovereigns and banks.[23,24]

It is widely believed that OMT was perceived as a credible ECB commitment – a credible threat to rentiers, if you wish. As a result, bond markets calmed and panic was arrested. However, OMT did not provide any stimulus to the euro area economy; sliding into another recession was at that time pointed to in macroeconomic forecasts (Tooze, 2018, pp. 442-443; Honohan, 2019, p. 94). Revision of monetary policy and, for that matter, abandoning the separation principle and making active use of the ECB's balance sheet could no longer be postponed. Besides, the ECB was confronted with three contingencies: receding excess liquidity and exchange-rate movements had effectively tightened the stance of monetary policy; the latter's transmission through the banking channel had evidently been impaired; and disinflation had been entrenched in the euro area economy, because of a weakening aggregate demand and lower inflation expectations (Rostagno et al. 2019, p. 17).

What is probably more, monetary policy was the only stabilisation instrument on offer. Although the ECB's main policy rate had virtually reached the zero-lower bound -by November 2013 the interest rate on the ECB's main refinancing operations had been cut to 0.25%- fiscal stabilisation in the euro area was politically and institutionally restrained; and that will hardly change substantially in the foreseeable future. Yet, mainstream macroeconomic theory -in the form of workhorse New Keynesian models of the business cycle- and analysis show that, when an economy enters a liquidity trap, fiscal policy aiming at directly stimulating demand will in all likelihood be effective (for example, Eggertsson, 2009; DeLong and Summers, 2012).

Following the experience of a number of smaller countries' central banks outside the euro (Denmark, Sweden, Switzerland), the ECB introduced in June 2014 a negative interest rate of -0,10% on its deposit facility. Henceforth the rate on the deposit facility would effectively become the ECB's main policy rate – the rate on its main refinancing operations having been lowered to 0.05% in September 2014 and 0.00% in March 2016. A series of 10 basis points cuts were subsequently introduced -in September 2014, December 2015, March 2016 and September 2019- bringing the rate on deposit facility to -0.50%. Designed to dissuade households and businesses from saving, thereby making borrowing and spending on consumption and investment more attractive, negative rates are nonetheless controversial.

Obviously, the effectiveness of negative rates in stimulating demand depends much upon the response of banks, whether that be related to lowering rates on the deposits of households and firms, or lending; and it also depends on the response of savers and borrowers to banks' interest-rate policies (for an optimistic view, see Alatavilla et al., 2019). Yet, the transmission of the ECB's negative rates, especially their effect on the lending policies of banks and business investment, may differ across banks, depending upon their funding base -that is, upon their relative reliance on deposits or market funding- and on their taking of risk in lending or investing in securities issued by the private sector (Heider et al. 2019). And the same may go a long way towards putting the issue of bank profitability in perspective.[25]

How far can the negative-policy-rates policy go? Kenneth Rogoff (2016) has eloquently argued the case for making negative rates "central banking business as usual" (p. 127), while fully acknowledging the legal, institutional, political economy and even moral questions pertaining to phasing out paper currency. Indeed, paper currency is the major obstacle to introducing negative rates on a large scale; there is virtually no impediment to charging negative rates on electronic currency (p. 5-6). Yet, regardless of the impressive technological devel-

opments (from credit and debit cards to blockchain technology) allowing for an ever-expanding use of electronic money, love for cash remains strong. As a matter of fact, 79% of all transactions by euro area consumers in 2016 were made in cash, such a preference being stronger in southern euro area countries, as well as in Germany, Austria and Slovenia (Esselink and Hernández, 2017). Yet, demand for cash is very likely to be endogenous to a central bank's policy rates (Shirai and Sugandi, 2019).

The limits to the ECB's policy of negative interest rates are virtually set at the level of a "political lower bound". In other words, they are determined by the implications of negative rates for income redistribution across and within euro area countries, redistributive cleavages being shaped by financial, institutional and demographic factors. Hence, savers are pitted against borrowers, deposits-funded banks against market-funded credit institutions and young or even middle-aged households against elderly ones. Therefore, it causes little surprise that opposition to the ECB's policy of negative interest rates was so furious in Germany. The media made use of the (German) term "Strafzins" or "punishment rates" to refer to below-zero interest rates; *Bild* portrayed Mario Draghi as "Count Draghila", a vampire sucking dry the deposit accounts of savers. And Finance Minister Wolfgang Schäuble went so far as to say that the effects of the ECB's monetary policy were fuelling German Euroscepticism, thereby boosting the popularity of the Alternative für *Deutschland* **(**AfD) so party.[26]

Forward guidance (FwG) was effectively introduced in July 2013, aiming to anchor inflation expectations and preserve an accommodative level of long-term interest rates in the face of tensions in global bond markets and a still timid euro area recovery (Hartmann and Smets, 2018, p. 36). FwG was also intended to inform market agents and the public at large about the ECB's reaction function (Praet, 2013), thereby implying the central bank's commitment to bring inflation (lower but) close to 2%. FwG has subsequently evolved and a framework for that policy has formally been defined. Thus, FwG took up a time and state-contingent form and even linked guidance on policy rates to that on the ECB's net asset purchases (about which more later), thereby allowing for policy interactions to be realised and enabling coordination of investor expectations in asset markets (Rostagno et al., 2019, p. 18). Adjustments to FwG were later made in order to take account of changes in other monetary policy instruments.

Rationalisating FwG has given monetary theorists a hard time. A "forward guidance puzzle" has thus emerged: standard New Keynesian models predict that a credible FwG commitment to keep policy rates low for a long time has an immediate effect on output and inflation, although such a prediction is evidently unrealistic – and theoretically challenged too (Eberly and Woodford, 2020, esp.

pp. 233-234). Alan Blinder (2018) has bluntly argued that there is nothing reasonable in our belief that FwG works in practice, that is, in the belief that central banks can influence long-term interest rates by influencing expectations of future short-term rates. Such a belief is conceptually relied on the rational expectations theory which is no less than an "abysmal empirical failure" (p. 568). Indeed, the effectiveness of FwG is theoretically doubted in models featuring bounded rationality and heterogenous agents (Farhi and Werning, 2019). Importantly, Blinder (2018) has also argued that FwG is about prediction, not commitment, the main purpose of a central bank's communication about monetary policy being to "influence market expectations by forecasting its own behaviour" (p. 569). Obviously then, the effectiveness of FwG, however little, depends a lot upon the quality of a central bank's macroeconomic forecasts. Alas, ECB forecasts in the years 2013-2018 have been found to be systematically incorrect, thereby rendering the central bank's FwG inadequate and prompting market participants to ignore it (Darvas, 2018).

Using the ECB's balance sheet as a monetary policy instrument came to be considered inevitable. The easing of policy rates -from September 2011 to June 2014 the rate on the main refinancing operations was cut by 125 basis points- had little effect on economic activity in weak euro area countries and the outlook for inflation had worsened (Hartmann and Smets, 2018, p. 34). Credit growth was still negative, largely reflecting continuing private sector deleveraging. Banks, in particular, were making use of the early repayment option they were afforded in VLTROs to pay back a large amount of liquidity they had borrowed in times of liquidity shortages; and the ECB's balance sheet was consequently receding, but for no good reason from a macroeconomic point of view (Praet et al., 2019, p. 104).

Thus, in June 2014 the ECB introduced targeted longer-term refinancing operations (TLTROs) with a four-year maturity. Lending of last resort to credit institutions would now be made conditional on the latter's use of borrowed liquidity. That is, banks had to lend the borrowed liquidity to non-financial firms and households and if they failed to do so, they would have to pay back idle liquidity before the maturity date of the relevant TLTRO;[27] moreover, they could no longer take part in further longer-term refinancing operations (Fontan, 2018, pp. 176-177). However, reluctance on the part of banks to borrow on such conditions led the ECB to soften sticks and strengthen carrots – to relax conditionality and enhance incentives. Thus, in March 2016 a second TLTRO programme was introduced whereby banks were no longer required to repay the liquidity they had borrowed prior to its maturity date, whilst borrowing rates were linked to the participating banks' amount of lending (with the exception of lending to

households for house purchases); borrowing rates could even be as low as the interest rate on the deposit facility. The latter provision was made more attractive in the third TLTRO programme which was introduced in March 2019; namely, borrowing rates could now be as low as the average interest rate on the deposit facility prevailing over the life of TLTRO.[28]

Using the ECB's balance sheet became at last the main monetary policy instrument. This entailed both increases in size and changes in the composition of the central bank's balance sheet (on the asset side); to that effect, the ECB played (nearly) in full the role of an investor of last resort. In September 2014 an asset-backed security programme and a third covered bond purchase programme were introduced. Yet, the biggest -and most controversial- part of the ECB's asset purchase programme (APP) was announced in January 2015, amidst persistent deflationary pressures and long-term inflation expectations trending quite lower than 2% (Brunnermeier et al., 2016, pp. 360-361); and a corporate sector purchase programme (CSPP) and, far more importantly, a public sector purchase programme (PSPP) were to start in March 2015. The ECB was thereby taking not so much a brave -the other major central banks having been there before- as a bold step toward the age of quantitative easing (QE). What was bold, however, might have been braver had it been prompter; and, perhaps, bravery would also have been more rewarding.

Thus, during the 2015-2018 period, monthly purchases averaged: 60 billion euros from March 2015 to March 2016; 80 billion euros from April 2016 to March 2017; 60 billion euros from April 2017 to December 2017; 30 billion euros from January 2018 to September 2018; and 15 billion euros from October 2018 to December 2018. Furthermore, between January 2019 and October 2019 the ECB fully reinvested the principal payments from maturing securities, in order to maintain the cumulative net purchases at the level obtained in December 2018. In September 2019 the ECB Governing Council decided that APP purchases be restarted in November 2019 and end only shortly before it starts raising the policy rates; and reinvesting the principal payments from maturing securities be fully continued for "as long as necessary to maintain favourable liquidity conditions and an ample degree of monetary accommodation", that is, "for an extended period of time past the date on which the Governing Council begins to raise the key ECB interest rates". At the end of January 2020 Eurosystem holdings under the APP amounted to about 2.600 billion euros in total, of which about 2.115 billion euros were accounted for by holdings accumulated under the PSPP.[29]

No wonder the ECB's QE -its PSPP dimension, in particular- was politically controversial and economically doubtful. A great deal of criticism came from the German side and focused on familiar concerns; the boundaries separating

monetary and fiscal policy would effectively be blurred and a transfer union, mostly in the form of a Eurobond, would be introduced through the backdoor. In response to such criticisms, and by way of concession to German demands, ECB purchases were to be made in proportion to the capital contributed to the ECB by each national central bank and a limit of 33% was placed on the share of a country's outstanding debt held by the Eurosystem.[30] What is more, national central banks were to make 80% of bond purchases and take on their own balance sheets the sovereign risk implied; risk sharing was thus limited to 20%.

However, such arrangements revealed a paradox inherent in the ECB's QE; namely, bond purchases were to be made regardless of the size of sovereign debt markets, their allocation being instead determined by the size of the economy and the population of the euro area member states.[31] Those arrangements also implied that the pace of QE would inevitably be slowed down -actually it did- because of bond purchases reaching their 33% limit. And they also reflected a fundamental flaw built into the Eurosystem, as argued by Willem Buiter (2019). In spite of their holding significant amounts of assets at their own risk, national central banks have almost no control over their issuance of central bank money -this is decided by the ECB Governing Council- thereby running the risk to go bankrupt. In this sense, all euro-denominated assets held by national central banks are effectively foreign-currency-denominated assets (p.4).

Mainstream monetary theory, in the form of general equilibrium models with representative agents, had virtually offered no support to QE. This (pessimistic) view of QE has recently been questioned in models with heterogenous households – economically unequal households holding assets with different liquidity properties (for a discussion, see Cui and Sterk, 2018). Yet, theoretical ambivalence may partly explain why the effects of QE are still poorly understood, let alone safely predicted. Robert Skidelsky (2018) has rightly argued that, in effect, central banks had to take a chance with the (long rebutted) Fischer-Friedman version of monetarism -at that time embraced by the Fed chairman Ben Bernanke- thereby turning themselves into quantity theorists of sorts (p. 256).

QE was meant to work through various channels; namely, the portfolio rebalancing channel, inducing holders of sovereign bonds to switch to equities and corporate bonds, thus encouraging firms to raise funds in capital markets; the bank lending channel, offsetting the vast increase in liquidity preference of banks, firms and households; the exchange rate channel, entailing an increase in the demand for foreign assets, a fall in the euro exchange rate and an increase in exports; and the signaling channel, revealing the central bank's commitment to reflation, thereby allowing for the long-term inflation expectations to be re-anchored (Brunnermeier et al., 2016, p. 362-363; Skidelsky, 2018, pp. 263-268).

Yet, the scope and the effectiveness of QE were empirically challenged. Granted, critical arguments were deployed in the deliberations of the ECB Governing Council – and in political debates too. Deflation, to start with, was said to pose no threat to economic growth; historical evidence has made clear that deflation may often reflect improvements in productivity and cause no harm to consumption expenditure and aggregate demand (Bordo et al., 2004). Furthermore, experience with QE, in both the US and Japan, was thought to have made evident that not all QE operations were equally successful, nor were all channels of transmission equally powerful. Thus, in the US purchases of mortgage-backed securities helped the balance-sheet debilitated housing sector to recover, whilst purchases of government bonds had no obvious success; and in Japan implementation of QE in 2013 led to large movements in the stock market and the exchange rate, implying that the exchange rate channel was the most powerful one (Brunnermeier et al., 2016, p. 364). Admittedly, the more QE works through the exchange rate channel, the less palatable are its repercussions for the world's political economy.

Furthermore, it was maintained that portfolio rebalancing may result in the formation of asset price bubbles. It was also argued that, by reducing funding costs and allowing for lower interest rates on bank loans, QE may facilitate the emergence of so-called "zombie companies", thereby causing deceleration in productivity growth, albeit indirectly (for a discussion of the negative reallocation effects of easier credit constraints, see Aghion et al., 2019). Finally, from a wholly different point of view, it was alleged that QE has a "substitution effect", namely that it discourages alternative policy strategies with less inegalitarian effects, such as "helicopter money" or fiscal stabilisation (Fontan, 2018, pp. 176-177) – but this is a far-fetched allegation so far as the euro area's political economy is concerned.

Assessing the effects of the ECB's QE is a daunting task. It is an exercise in counterfactual reasoning, thus being fraught with (huge) uncertainty about paths that would have been taken, had QE been implemented in a different way or/and earlier – or simply in its absence. Likewise, disentangling the impact of QE from that of the other, yet in parallel pursued, ECB's (non-standard) policies is hard to attain. Nevertheless, there is a widespread belief that monetary easing -and QE in particular- was less successful in the euro area than in the US and the UK. In the US coordination of fiscal and monetary policy provided for more stimulus being injected, whereas in the UK the stimulus from monetary policy was bigger than in the euro area (Skidelsky, 2018, pp. 273-274). One may plausibly speculate that had the ECB's monetary policy been less hesitantly activated, the euro area would probably have escaped, perhaps in part, the ills of double-dip recession, stubbornly low inflation and

lower drifting long-term inflation expectations, subdued investment and declining Wicksellian (natural) interest rates and weak GDP growth prospects. That echoes Paul Krugman's diagnosis of the Bank of Japan's (BoJ) failure, in 2014, to stimulate aggregate demand and bring about a sustained increase in inflation; namely that the BoJ had lost credibility having being stuck in a "timidity trap" (cited in Mody, 2018, pp. 382-383).

What is maybe more important, the effects of the ECB's QE have not been distributionally neutral. Asset owners have clearly benefitted and, given that wealth tends to be concentrated in richer households, a further increase in the concentration of private wealth has in all likelihood occurred (Fontan, 2018, p. 176). Furthermore, it is maintained that savers holding interest-bearing assets have suffered an income loss, whilst net-borrowing younger households have enjoyed increases in their purchasing power (Dobbs et al., 2013). On the other hand, research by a group of ECB economists has focused on the impact of monetary policy on wages and income, while accounting for differences amongst households in employment and ownership of liquid assets; their findings point to favourable income effects for households holding few or no liquid assets, implying a reduction in inequality (Ampudia et al., 2018). However, evaluating the impact of non-standard monetary policy on financial variables, such as stock market prices, bond yields and interest rates, is relatively straightforward, whereas assessing its effects on real economic variables -which is much more important- depends a lot upon counterfactual reasoning, thus being controversial (Skidelsky, 2018, p. 263).

Of course, the distributional effects of the ECB's monetary policy have a bearing on the bigger questions of the central bank's independence and accountability. Granting independence to central banks was premised on the distributional neutrality of monetary policy (Tucker, 2018). Politically neutral central banks could solely focus on safeguarding price stability (and, in broader terms, providing for macroeconomic stabilisation) by making uncompromised use of their technocratic expertise. Transparency and accountability -or, in a narrowly technical form, accountability as transparency- were among other meant to enhance the legitimacy of central banks. However, one may fairly suggest that central banks, the ECB being virtually on the forefront, have increasingly been accountable to those people who are able to fully grasp the highly technical issues pertaining to monetary policy, or are well aware of their practical implications, that is, to large-scale asset owners and, by way of aggregation, the financial sector (for a theoretical treatment of central bank accountability along these lines, see Best, 2016).

4. Back to the drawing board

"If central bankers are the only game in town, I'm getting out of town!"

(Mervyn King, 2013)[32]

"But monetary policy does not exist in a vacuum. The situation of central banks is better described as independence in interdependence, since other policies matter a great deal. They can buttress or dilute the effects of our policy. They can slow down or speed up the return to stability. And they can determine whether stability is accompanied by prosperity…"

(Mario Draghi, 2016)

"[M]onetary policy cannot, and should not, be the only game in town. The longer our accommodative measures remain in place, the greater the risk that side effects will become more pronounced… Other policy areas –notably fiscal and structural polices– also have to play their part… Indeed, when interest rates are low, fiscal policy can be highly effective… We also have to gear up on climate change… Like digitalization, climate change affects the context in which central banks operate…"

(Lagarde, 2020)

The ECB could hardly afford political neutrality, even in the monetary union's "honeymoon phase". Being a stateless central bank entailed striking compromises between conflicting (national) monetary policy preferences. However, such compromises would often be reached at the expense of theoretical consistency and to the detriment of coherence in the ECB's monetary policy strategy. And, perhaps inevitably, they would also bear the mark of the dominant partner in the European Monetary System, that is prior to the establishment of the monetary union (Giavazzi and Giovannini, 1989), now also being the biggest subscriber to the ECB's capital. Political neutrality and, for that matter, monetary activism on the part of the ECB -as well as liquidity in the euro-area- were largely inadequate during the euro area crisis, especially in its early phase. They were subsequently increased, but at a slow pace and in a preferential fashion, that is, largely to the benefit of the banking industry. Eventually, the ECB did try to make a virtue of necessity; yet, this could only go so far. Thus, the ECB has reluctantly become the only game in town, its reluctance being mostly associated with the overriding concerns of certain national central banks of the Eurosystem, most notably the Bundesbank; namely, ensuring monetary dominance, averting (at that time illusory) inflationary dangers, preventing moral hazard, enforcing structural reforms and, not least, fending off any,

indirectly emerging, type of transfer union. Therefore, the ECB could have no great ambitions; its lonely game was unlikely to produce a medal-winning policy maker in the world championship of central banking.

In November 2019 Christine Lagarde succeeded Mario Draghi to the presidency of the ECB.[33] In January 2020 the ECB's Governing Council launched a review of the central bank's monetary policy strategy, encompassing the quantitative definition of price stability, the ECB's monetary policy, the analytical framework and the central bank's communication practices. Other issues will also be considered, such as financial stability, employment and climate change.[34] No doubt, the quantitative formulation of price stability is of the utmost importance. But it is also surrounded by theoretical controversies regarding: a. specification of the target – nominal GDP (Hughhes Hallet et al., 2015), the price level, inflation, Taylor rule; b. symmetry of the target – downward and/or upward; c. flexibility of the target – for example, flexible inflation averaging (Mertens and Williams, 2019); d. the numerical value of the target, especially in the case of inflation targeting (a higher inflation target at around 4% is advocated in Blanchard et al., 2010). Taking into account inflation differentials amongst the euro area economies is an equally important element of the ECB's monetary regime – and should accordingly be dealt with in the upcoming deliberations.

In principle, a higher inflation target and/or a more flexible regime, including specification of an inherently flexible target, allow for the ECB's monetary policy providing more support to the fulfillment of other (general) economic policy objectives, primarily (full) employment. Yet, there is no absence of trade-offs and policy dilemmas. For example, safeguarding financial stability may, sometimes, imply the need for a less accommodative monetary policy stance than otherwise justified, implementation of macroprudential measures notwithstanding. Furthermore, "greening" the ECB's monetary policy, for example by tilting the Eurosystem's assets and collateral towards low-carbon industries and firms (as suggested in Schoenmaker, 2019), may be associated with substantial side-effects of an allocative and redistributive nature, regardless of the potential (maybe positive) overall impact of a "green" monetary policy on productivity and growth; concerns relating to the ECB's independence and accountability may thus arise.

Questions about the conduct of monetary policy, and normative theoretical controversies for that matter, are founded on analytical grounds. The ECB's analytical framework as well as the methods and models deployed therein will, therefore, be subjects of intense debates, theoretical controversies still being empirically unresolved. Amongst the numerous issues that need to be dealt with the following are only indicative. What has the relative impact of money and credit been on prices and economic activity both in normal and disinflationary

conditions, compared to the effects of policy rates? And how and to what extent has monetary analysis informed the ECB's reaction function respectively? What is, thus, likely to be the added value of monetary analysis to the ECB's policy framework, regardless of its formal acknowledgement, or lack thereof (for a favourable view, see Rostagno et al., 2019)? What drives inflation and how can the episodes of "missing disinflation", after the onset of the Great Recession, and "missing inflation", in the period of economic recovery, be explained (for example, see Ehrmann et al., 2020 and references therein; Arrigoni et al., 2020)? Is the Phillips curve still alive and useful in macroeconomic analysis (for example, see Ball and Mazumder, 2020; for a deeply skeptical, yet thoroughly argued view on the Phillips curve, Forder, 2014)? What is -and should be- the place of (still evolving) general equilibrium models with heterogenous agents in the ECB's macroeconomic analysis, especially in regard to the analysis and prediction of the effects of unconventional monetary policies on prices, economic activity and income distribution?

Historical experience, however little by other central banks' standards, provides enough evidence to suggest that the 2020 review of the ECB's monetary policy strategy is most likely to be yet another instance of both conflicting policy preferences being in full force and the conservative preferences of policy makers from core euro area countries weighing heavier. The outcome of the review process is, therefore, likely to cause little excitement, at least as far as the theoretical consistency of the monetary policy framework and the coherence of the ECB's strategy are concerned.

Be that as it may, the ECB's monetary policy can no longer be the only game in town. Monetary easing has been facing increasing constraints; its stabilization potential has been receding, whilst its side-effects have been reinforced. And criticism has, therefore, been getting harsher.[35] Regardless of its potency -which is nonetheless disputed- "helicopter money" is a form of fiscal policy, also raising issues of coordination between monetary and fiscal authorities, thereby jeopardising the principle of central bank independence (Reichlin et al. 2019; Davies, 2020). One may thus plausibly allege that this policy option is simply out of the ECB's reach.

Thus, an active fiscal policy is much needed, primarily in countries with fiscal space. What is more, so long as interest rates are lower than rates of economic growth -as they will in all likelihood be in the foreseeable future- a reasonable increase in public debt is both desirable and feasible, that is, fiscally not costly (Blanchard, 2019). Not only are pressures for debt monetization literally non-existent but, as Marco Buti (2020) has brilliantly argued, a monetary-fiscal paradox is thereby thwarted; namely, when monetary policy is at the zero lower

bound, excessive fiscal prudence is tantamount to a form of fiscal dominance, in the sense that fiscal sluggishness impedes the ECB's monetary policy to fulfill its primary objective (p. 8). As a matter of fact, Mario Draghi had long made the case for a more balanced stabilization policy, entailing fiscal expansion (and/or accelerating structural reforms), but to no avail. Adequate fiscal expansion is currently not on offer – and, in general, credibly countercyclical fiscal policies are institutionally circumscribed.

What is more, achieving an appropriate euro area fiscal stance -allowing for short-term stabilisation and ensuring long-tern sustainability, the trade-offs notwithstanding- while paying little regard to national fiscal positions and little attention to structural asymmetries in spending and saving patterns makes little sense. In fact, it only tends to perpetuate "the paradox of thrift", which stems from the (institutionally required) excess saving in countries with no fiscal space and results in growth fragility (Lagarde, 2019), while reinforcing asymmetries amongst euro area countries. An appropriate euro area fiscal stance could thus be attained if only a central fiscal capacity was established. However, such a prospect is hardly acceptable by core euro area countries; it entails risk-sharing, encourages moral hazard and activates transfers to peripheral euro area countries, as their arguments go. Yet, the European monetary union has been a "transfer union from the start" (Perotti and Soons, 2020; Wolf, 2019); trade and financial integration resulted in implicit flows from the periphery to the core, such flows having been not resisted. Herein lies the fundamental asymmetry in the political economy of the euro – a deep flaw, which cannot be rectified by the ECB on its own. The truism remains: monetary policy can only go so far.

Notes

1. Ben Bernanke had famously quipped, while being chairman of the Federal Reserve, that "the problem with quantitative easing is that it works in practice, but it doesn't work in theory" (Bernanke, 2014; an opposing argument is developed in Farmer and Zabczyk, 2016).
2. Drawing a comparison between the US, the UK and continental Europe's economic performance in the 1990s, Mervyn King had argued thus: "In the United States growth was so rapid that at least two authors wrote books entitled 'The Roaring Nineties' and another chose the title 'The Fabulous Decade'. In contrast, continental Europe experienced slow growth and heart-searching over structural reforms. As with much else, our economic performance lay somewhere between the excited exuberance of the United States and the relative disappointment of continental Europe. So the UK experienced a non-inflationary consistently expansionary - or ***"nice"*** - decade; a decade in which

growth was a little above trend, unemployment fell steadily, and, supported by the improved terms of trade, real take-home pay rose without adding to employers' costs, thus allowing consumption to grow at above trend rates without putting upward pressure on inflation." (King, 2003).

3. Following the worsening of the medium-term outlook for the UK economy, as evidenced in the inflation forecasts released by the Bank of England in May 2008, an article titled "The start of the nasty decade?" appeared in the opinion page of the *Financial Times,* May 16, 2008.
4. In June 2013, Raghuram Rajan, who had recently been appointed governor of the Reserve Bank of India, gave the first Andrew Crockett Memorial Lecture. In his closing remarks he asserted that central banks had "offered [themselves] as the only game in town" (in Tucker, 2018, p. 535). = was later adopted by Mohamed El-Erian as the title of his much-cited book (El-Erian, 2016).
5. Although it deserves a place in the main text, a brief reference to the operational framework and the monetary policy measures of the ECB, as there were initially set up, is made in this footnote, only for reasons of economy. Thus, the operational framework for implementing the monetary policy preferences of the ECB consisted of the following sets of instruments: open market operations, standing facilities and minimum reserve requirements. The monetary policy preferences of the ECB are revealed via its setting of three key interest rates, namely the rate on the main refinancing operations, the rate on the deposit facility and the rate on the marginal lending facility. Furthermore, pursuant to Article 14.4 of the Statute of the European System of Central Banks and of the European Central Bank (Protocol No 4, OJ C 326/230, 26.10.2012), which sets the broad rules and the procedures governing national central banks' functions outside of normal monetary policy operations, an Emergency Liquidity Assistance (ELA) facility was established – and the relevant rules and procedures were operationally specified by the Governing Council. Following the global financial crisis and the crisis in the euro area, the ECB has at various stages added new instruments and introduced several non-standard monetary policy measures, discussion on which is made in the next section (for a detailed description of the operational instruments and the monetary policy measures of the ECB, see https://www.ecb.europa.eu/ home /html /index.en.html).
6. However, a higher weight on interest rate smoothing compared to output stabilisation requires an even longer policy horizon. Generally, though, the optimal horizon is longer when the objective of price stability is specified as a price level target than when its quantification takes the form of an inflation target (Smets, 2003).

7. As a matter of fact, ECB President Wim Duisenberg was at pains to explain that there would be no tolerance of (prolonged) deflation on the part of the Governing Council – as recalled in the introductory quotation to this section.
8. Following a coordinated step by national central banks in the euro area, policy rates were reduced to 3% in December 1998; and that had effectively been the short-term interest rate bequeathed to the ECB, in other words the policy rate at which the ECB started its monetary policy operations when the third stage of the European economic and monetary union was launched, in January 1999 (Hartmann and Smets, 2018, p. 14).
9. Persistent Inflation differentials across regions are surely observed in other monetary unions too, although their size is (much) smaller than that within the euro area (Darvas and Wolff, 2014). What is more, inflation differentials matter less in fully-fledged economic and monetary unions -in effect, political unions- featuring inter alia centralised fiscal capacity.
10. Of course, raising the issue of compliance with the Stability and Growth Pact does not in any way imply -and is not meant to imply herein- that the Stability and Growth Pact is economically sound. In other words, the argument made here, relating fiscal stability to observance of the Stability and Growth Pact, has no normative relevance other than legalistic.
11. ECB President Wim Duisenberg could hardly make it more explicit. As he argued in one of his public speeches "… political pressures on monetary policy to facilitate or 'reward' developments on the fiscal and structural side would raise uncertainty about the objectives of monetary policy, thereby endangering credibility and reducing the benefits associated with the maintenance of price stability." (Duisenberg, 2001).
12. Note that, during the period 2000-2007, the average annual rate of growth of M3 was 7.2%, the benchmark being 4.5% (Koutsiaras and Manouzas, 2016, pp. 12, 43).
13. Leaving aside legal controversies, one should acknowledge that, although both refinancing operations and sovereign bond purchases provide liquidity to the banking system directly, sovereign bond purchases provide liquidity to governments too, albeit indirectly. Moreover, if the market value of collateralised bonds is adequately haircut, as can reasonably be assumed, refinancing operations are relatively risk-free, whereas sovereign bond purchases are inherently risky; governments may default on their debts (Brunnermeier et al., 2016, p. 344).
14. Patrick Honohan, who was at that time Governor of the Central Bank of Ireland (and member of the ECB's Governing Council), takes the view that the "more obvious policy would have been to wait" (Honohan, 2019, p. 92). Yet, as

he acknowledges, custom -"[a] degree of deference to the views of the president is inevitable in such matters"(p. 92)- and, perhaps mostly, a successful negotiation on his part to avert a technical change in ECB bank lending rules that would have hurt Irish interests, did not allow Governor Honohan to make his opposition to the rate increase explicit. Who says that the ECB's monetary policy is politics-proof?

15. Interestingly, presenting himself to the European Parliament, in June 2011, Mario Draghi argued the case against monetary easing (Mody, 2018, pp. 295-96). Not much later, though, he was going to change course.
16. Ashoka Mody has forcefully argued that, contrary to widespread beliefs (for example, see Buti, 2020), the Deauville agreement did not cause panic in bond markets; the agreement was misinterpreted by analysts, not markets (Mody, 2018, pp. 276-278).
17. See footnote 13.
18. One should bear in mind that the price -and yield- of government bonds is not impervious to central banks' collateral policy and investor-of-last-resort interventions; indeed, it is endogenous to such central banks' policies. And this implies that the central banks' balance-sheet risk is lower than often thought.
19. Old habits die hard.
20 In order to lessen that risk, the ECB had put a cap on the amount of Bank of Greece's purchases of Greek treasury bills via ELA; the cap had been set at the level of 3.5 billion euros.
21. In an interesting study of the central bank elite, Mikael Wendschlag (2018, p. 183) maintains that, in general, the economic and political context "seems to pick" its distinct type of central bank governors. Yet, somehow paradoxically, he also observes that changes in central bank practices "appear to be" closely related to changes in leadership. One might wish to approach the remaining part of this section as an evidence-based discussion of Mario Draghi's attestation to either of the two interpretations. This paper does not have such an explicit intention; yet, it implicitly sides with the first interpretation.
22. In 2015, the European Court of Justice ruled OMT legal; yet, it also ruled that there are limits to the ECB's discretion in that respect.
23. See, https://www.bankingsupervision.europa.eu/about/milestones/shared/pdf/2012-06 29_euro_area_summit_statement_en.pdf.
24. A word of caution is in order here: this nexus could well be less dismal than commonly thought. It is argued that self-fulfilling pessimism about a country's solvency is mostly sourced in foreign banks' lack of soft information on the local economy and the capacity of the issuing government. The nexus could thus allow a country to resist the dismal implications of foreign banks'

panicked sales of domestic assets; that is, domestic banks, enjoying soft informational advantages, could act as byers of last resort (Saka, 2020).

25. Responding to concerns about profitability raised by European banks -but officially sticking to the transmission argument- the ECB's Governing Council decided in September 2019 to introduce a two-tier system for reserve remuneration. Thus, part of the excess liquidity of banks held with the Eurosystem, amounting to a multiple of a bank's minimum reserve requirements, will be exempted from the -0.50% deposit rate. The size of the multiplier -currently at the level of 6- is subject to adjustments (https://www.ecb.europa.eu/mopo/two-tier/html/index.en.html.). Clearly, the two-tier system is more in favour of credit institutions in countries where deposits exceed loans (for example, in Germany or France), rather than where banks are market-funded.
26. "There's a German word for negative rates", https://ftalphaville.ft.com/2019/09/13/1568375752000/ There-s-a-German-word-for-negative-rates/. Also, "ECB boosting Euroscepticism in Germany?", https://www.eurotopics.net/en/152285/ecb-boosting-euroscepticism-in-germany#.
    It is important to note that by 2019, 60% of German banks were charging negative rates on corporate savings accounts and more than 20% were doing the same for retail deposit accounts; "Most German banks are imposing negative rates on corporate clients", *Financial Times*, November 18, 2019. See also footnote 25.
27. To put it precisely, the maturity of borrowed liquidity was conditional on banks achieving certain lending thresholds. Calculation of lending thresholds was based on the amount of past bank lending. Given that past lending was low at that time, thresholds were not hard to achieve. However, banks were dissatisfied (Fontan, 2018, p. 176).
28. https://www.ecb.europa.eu/mopo/implement/omo/tltro/html/index.en.html.
29. This paragraph, including quoted phrases, draws fully on https://www.ecb.europa.eu/mopo/implement/ omt/html/index.en.html.
30. That limit had initially been set at 25%; it was raised to 33% in September 2015.
31. With the exception of Greece which did not have access to the QE programme owing to its failure to satisfy certain technical requirements.
32. That is how Mervyn King responded to Raghuram Rajan's suggestion that central banks had become the only game in town (cited in Tucker, 2018, p. 535). See also footnote 4.
33. Mikael Wendschlag (2018, p. 207) argues that, following the crisis, the "academically founded 'credibility'" of central bankers has been questioned and that a transformation of central bank elites is currently in the making. And

he observes that, as calls for more democratic accountability of the central banks and policy makers have gained force, a "return of the politically vested central banker of the post-Second World War decades" is underway. Partly at least, the appointment of Christine Lagarde to the presidency of the ECB seems to confirm Wendschlag's observations; and the same applies -perhaps to an even larger extent, for obvious institutional and political reasons- to the case of Jerome Powell, who was appointed to the Fed Chair in February 2018. Both Lagarde and Powell are lawyers by training, specialising in finance, and have spent some time in government posts. See also footnote 21.

34. https://www.ecb.europa.eu/press/pr/date/2020/html/ecb.pr200123~3b8d9fc08d.en.html.

35. Following the announcement in September 2019 of a new round of monetary easing measures, six former central bankers -two amongst them being also former members of the ECB's executive board- signed a memorandum in which the ECB was severely criticised for its monetary policy being ultra-loose and potentially undermining the central bank's independence; "Memorandum on ECB Monetary Policy by Issing, Stark, Schlesinger", https://www.bloomberg.com/news/articles/2019-10-04/memorandum-on-ecb-monetary-policy-by-issing-stark-schlesinger.

Bibliographical References

Aghion Ph., A. Bergeaud, G. Cette, R. Lecat, H. Maghin (2019), "Financial constraints and productivity growth: An inverted-U relationship", https://voxeu.org/article/financial-constraints-and-productivity-growth.

Akerlof G. A., W.T. Dickens, G.L. Perry (1996), "The Macroeconomics of Law Inflation", *Brookings Papers on Economic Activity*, 1: 1-76.

Allard J., M. Catenaro, L.-P. Vidal and G. Wolswijk (2012), "Central Bank Communication on Fiscal Policy", *Working Paper* No. 1477, European Central Bank (ECB).

Altavilla C., L. Burlon, M. Giannetti, S. Holton (2019), "Is there a zero lower bound? The effects of negative policy rates on banks and firms", *Working Paper* No. 2289, European Central Bank (ECB).

Ampudia M., D. Georgarakos, M. Lenza, J. Slacalek, O. Tristani, P. Vermeulen, G. Violante (2018), "Monetary policy and household inequality", *Working Paper* No. 2170, European Central Bank (ECB).

Arrigoni S., R. Beck, M. Ca' Zorzi, L. Stracca (2020), "Globalisation: What's at stake for central banks", https://voxeu.org/article/globalisation-what-s-stake-central-banks.

Ball L. and S. Mazumder (2020), "A Phillips Curve for the Euro Area", *Working Paper* No. 2354, European Central Bank (ECB).

Barrios S. and A. Schaechter (2008), "The quality of public finances and economic growth", *Economic Papers* No. 337, *European Economy*.

Bernanke B. (2014), "A Conversation: The Fed Yesterday, Today and Tomorrow", Central Banking after the Great Recession: Lessons Learned and Challenges Ahead – A Discussion with Federal Reserve Chairman Ben Bernanke on the Fed's 100th Anniversary (excerpt), Washington D.C., January 16, 2014, The Brookings Institution, https://www.brookings.edu/wp-content/uploads/2014/01 /20140116_bernanke_remarks_transcript.pdf.

Best J. (2016), "Rethinking Central Bank Accountability in Uncertain Times", *Ethics & Intranational Affairs,* 30(2): 215-232.

Blanchard O. (2019), "Public Debt and Low Interest Rates", *American Economic Review,* 109(4): 1197-1229.

Blanchard O. and J. Gali (2007), "Real wage rigidities and the New Keynesian model", *Journal of Money, Credit and Banking,* 39(1): 35-65.

Blanchard O., G. Dell' Ariccia, P. Mauro (2010), "Rethinking Macro Policy", https://voxeu.org/article/rethinking-macro-policy.

Blinder A.S. (1997), "What Central Bankers Can Learn from Academics – and Vice-Versa", *Journal of Economic Perspectives*, 11(2): 3-19.

Blinder A.S. (2018), "Through a Crystal Ball Darkly: The Future of Monetary Policy Communication", *AEA Papers and Proceedings,* 108: 567-571.

Blinder A.S., M. Ehrmann, M. Fratzscher, J. De Haan, D.-J. Jansen (2008), "Central Bank Communication and Monetary Policy: A Survey of Theory and Evidence", *Journal of Economic Literature,* 46(4): 910-45.

Bordo M.D., J. Landon Lane, A. Redish (2004), "Good versus Bad Deflation: Lessons from the Gold Standard Era", *Working Paper* No. 10329, National Bureau of Economic Research (NBER).

Brunnermeier M.K., H. James and J.-P. Landau (2016), *The Euro and the Battle of Ideas,* Princeton and Oxford: Princeton University Press.

Buiter W.H. (2008), "Can Central Banks Go Broke?", Discussion Paper No. 6827, Centre for Economic Policy Research (CEPR).

Buiter W.H. (2019), *Central Banks as Fiscal Players: The drivers of fiscal and monetary policy space,* https://willembuiter.com/CUP.pdf.

Buti M. (2020), "Economic Policy in the Rough: A European Journey", *Policy Insight* No. 98, Centre for Economic Policy Research (CEPR).

Caballero D., A. Lucas, B. Schwaab, X. Zhang (2019), "Risk endogeneity at the lender/investor-of-last-resort", *Working Paper* No. 2225, European Central Bank (ECB).

Clarida R., J. Gali and M. Gertler (1999), "The Science of Monetary Policy: A New Keynesian Perspective", *Journal of Economic Literature*, 37(4): 1661-1707.

Commission EC (2008), "EMU@10: Successes and challenges after 10 years of Economic and Monetary Union", *European Economy,* 2.

Cui W., V. Sterk (2018), "Quantitative Easing", Discussion Paper No. 13322, Centre for Economic Policy Research (CEPR).

Darvas Z. (2018), "Forecast errors and monetary policy normalisation in the euro area", *Policy Contribution*, Issue No. 24, Bruegel.

Darvas Z. and G.B. Wolff (2014), "So Far Apart and Yet So Close: Should the ECB Care About Inflation Differentials?", *Policy Contribution*, Issue 2014/10, Bruegel.

Davies G. (2020), "A crossover of fiscal and monetary policy", *Financial Times***,** February 16, 2020.

De Grauwe P. (2005), *The Economics of Monetary Union,* **(**6th edition), Oxford: Oxford University Press.

De Grauwe P. and M.-A. Sénégas (2003), "Monetary Policy in EMU When the Transmission is Asymmetric and Uncertain", *Working Paper* No. 891, Category 6: Monetary Policy and International Finance, CESifo.

DeLong, J.B., L.H. Summers (2012), "Fiscal Policy in a Depressed Economy", *Brooking Papers in Economic Activity,* Spring: 233-297.

Dietsch P., F. Claveau, C. Fontan (2018), *Do Central Banks Serve the People?***,** Cambridge: Polity.

Dobbs R., S. Land, T. Koller, and A. Shwayder (2013), "QE and ultra-low interest rates: Distributional effects and risks", Discussion Paper, November, McKinsey Global Institute.

Draghi M. (2012), "The monetary policy of the European Central Bank and its transmission in the euro area", Speech by Mario Draghi, President of the ECB, Università Bocconi, Opening of the academic year 2012-2013, Milan, 15 November 2012, https://www.ecb.europa.eu/press/ key/date/ 2012/html/ sp121115_1.en.html.

Draghi M. (2016), "On the importance of policy alignment to fulfil our economic potential", 5th Annual Tommaso Padoa-Schioppa Lecture by Mario Draghi,

President of the ECB, at the Brussels Economic Forum 2016, Brussels, 9 June 2016, https://www.ecb.europa.eu/press/key /date/ 2016/ html/ sp160609.en.html.

Duisenberg W.F. (1999), "The Eurosystem's monetary policy strategy: The first year's experience", Speech by the President of the European Central Bank at the joint congress of the Federations, EUROFINAS and LEASEUROPE, 11 October, Paris, https://www.ecb.europa.eu/press/key/date /1999 /html/ sp991011.en.html.

Duisenberg W.F. (2001), "Current fiscal and monetary policy issues in the euro area", Speech by Dr. Willem F. Duisenberg, President of the European Central Bank, Taxpayers Association of Europe's, Taxpayers' Award 2001, Brussels, 12 December 2001, https://www.ecb.europa.eu/press/key/ date/2001/html/sp011207.en.html.

Eberly J. and M. Woodford (2020), "Emi Nakamura: 2019 John Bates Clark Medalist", *Journal of Economic Perspectives,* 34(1): 222-239.

Eggertsson G.B. (2009), "What Fiscal Policy is Effective at Zero Interest Rates?", Staff Report No. 402, Federal Reserve Bank of New York (Staff Reports).

Ehrmann M., M. Jarociński, C. Nickel, C. Osbat, A. Sokol (2020), "Inflation in a changing economic environment: Insights from a conference at the ECB", https://voxeu.org/ article/inflation-changing-economic-environment.

Esselink H., L. Hernández (2017), "The use of cash by households in the euro area", Occasional Paper No. 219, European Central Bank (ECB).

European Central Bank (2012), "Monetary Policy Decisions Decided by the Governing Council on 6 September 2012", ecb.europa.eu/pub/pdf/other/ mb201209_focus01.en.pdf.

El-Erian, Mohamed A. (2016**),** *The Only Game in Town: Central Banks, Instability, and Avoiding the Next Collapse,* New York: Penguin Random House.

Fahri E. and I. Werning (2019), "Monetary Policy, Bounded Rationality, and Incomplete Markets", *American Economic Review,* 109(11): 3887-3928.

Farmer R. and P. Zabczyk (2018), "Why unconventional monetary policy works in theory", https://voxeu.org/article/why-unconventional-monetary-policy-works-theory.

Fontan C. (2018), "Frankfurt's double standard: the politics of the European Central Bank during the Eurozone crisis", *Cambridge Review of International Affairs,* 31(2): 162-182.

Forder J. (2004), "'Credibility' in Context: Do Central Bankers and Economists Interpret the Term Differently?", *Econ Journal Watch,* 1(3): 413-426.

Forder J. (2014), *Macroeconomic and the Phillips Curve Myth,* Oxford: Oxford University Press.

Giavazzi F. and A. Giovannini (1989), *Limiting Exchange Rate Flexibility: The European Monetary System,* Cambridge/Mass: The MIT Press.

González-Páramo, José Manuel (2011), "The ECB's monetary policy during the crisis", Closing speech by José Manuel González-Páramo, Member of the Executive Board of the ECB, at the Tenth Economic Policy Conference, Malaga, 21 October 2011, https://www.ecb.europa.eu/ press/key /date/2011/ html/sp111021_1.en.html.

Honohan P. (2019), *Currency, Credit and Crisis: Central Banking in Ireland and Europe,* Cambridge: Cambridge University Press.

Hartmann P. and F. Smets (2018), "The first twenty years of the European Central Bank: monetary policy", *Working Paper* No. 2219, European Central Bank (ECB).

Heider F., F. Saidi, G. Schepens (2019), "Bank lending under negative policy rates", https://voxeu.org/article/bank-lending-under-negative-policy-rates.

Hughes H.A., W. Lechthaler, C.A. Reicher, M.F. Tesfaselassie, C. Blot, J. Creel, X. Ragot (2015), "Is nominal GDP targeting a suitable tool for ECB monetary policy?", Monetary Dialogue, September 2015, European Parliament – Directorate-General for Internal Policies (Policy Department for Economic and Scientific Policy).

Issing O. (2005), "Communication, Transparency, Accountability: Monetary Policy in the Twenty-First Century", *Federal Bank of St Louis Review,* 87(2): 65-83.

Issing O., I. Angeloni, V. Gaspar, H.-J. Klöckers, K. Masuch, S. N. Altimari, M. Rostagno, F. Smets (2003), "Overview of the background studies for the evaluation of the ECB's monetary policy strategy", in O. Issing in cooperation with I. Angeloni, V. Gaspar, H.-J. Klöckers, K. Masuch, S.N. Altimari, M. Rostagno, F. Smets (eds) *Background Studies for the ECB's Evaluation of its Monetary Policy Strategy,* Frankfurt am Main: European Central Bank: 5-30.

James H. (2012), *Making the European Monetary Union,* Cambridge/Mass. & London: Belknap/Harvard University Press.

King M. (2003), Speech by the Governor of the Bank of England, East Midlands Development Agency/Bank of England Dinner, 14 October, Leicester, htt-

ps://www.bankofengland.co.uk/ speech /2003/east-midlands-development-agency-dinner.

Koo R.C. (2011), "The world in balance-sheet recession: causes, cures, and politics", *Real-World Economics Review*, Issue No. 58, http://www.paecon.net/PAEReview/issue58/Koo58.pdf.

Koutsiaras N. (2001), "Social and Employment Policy", in R. Hall, A. Smith and L. Tsoukalis (eds) *Competitiveness and Cohesion in EU Policies,* Oxford & New York: Oxford University Press: 277-313.

Koutsiaras N. (2005), *Understanding Economic and Monetary Union,* Athens: Metamesonykties Ekdoseis (for the Institute of European Integration and Policy – National and Kapodistrian University of Athens).

Koutsiaras N. and Z. Manouzas (2016), "ECB for Greece: Sometimes independent, sometimes conservative?" Research Paper No. 20, Crisis Observatory, ELIAMEP (in Greek).

Krugman P.R. (2018), "It's Baaack: Japan's Slump and the Return of the Liquidity Trap", *Brookings Papers on Economic Activity*, 2: 137-205.

Lagarde C. (2019), "The future of the euro area economy" Speech by Christine Lagarde, President of the ECB, at the Frankfurt European Banking Congress, Frankfurt am Main, 22 November 2019, https://www.ecb.europa.eu/press/key/date/2019/html/ecb.sp191122~0c1f115db0.en.html.

Lagarde C. (2020), "Introductory statement by Christine Lagarde, President of the ECB, on the occasion of the presentation of the ECB Annual Report 2018 at the European Parliament", Strasbourg, 11 February 2020, https://www.ecb.europa.eu/press/pr/date/2020/html/ ecb.pr200123~3b8d9fc08d.en.html.

Leeper E.M. (2010), "Monetary Science, Fiscal Alchemy", *Working Paper* No. 16510, National Bureau of Economic Research (NBER).

McMahon M., U. Peiris, H. Polemarchakis (2012), "Outright Monetary Transactions sterilised?", https://voxeu.org/article/outright-monetary-transactions-sterilised.

Mertens T.M., J.C. Williams (2019), "Monetary Policy Frameworks and the Effective Lower Bound on Interest Rates", Staff Report No. 877, Federal Reserve Bank of New York.

Mody A. (2018), *Euro Tragedy: A Drama in Nine Acts*, New York: Oxford University Press.

Mody A., M. Nedeljkovic (2018), "Central Bank Policies and Financial Markets: Lessons from the Euro Crisis", *Working Paper* No. 7400, CESifo.

Pain N., I. Koske and M. Sollie (2008), "Globalisation and OECD Consumer Price Inflation", *Economic Studies* No.1, OECD.

Pereira M. and J. Tavares (2019), "Extracting Implicit Country Weights in ECB's Monetary Policy", Discussion Paper No. 14090, Centre for Economic Policy Research (CEPR).

Perotti E., O. Soons (2020), "The euro: A transfer union from the start", https:// voxeu.org/ article/ euro-transfer-union-start.

Posen A. (1995), "Central Bank Independence and Disinflationary Credibility: A Missing Link?", Staff Reports No. 1, Federal Reserve Bank of New York.

Praet P. (2013), "Forward guidance and the ECB", https://voxeu.org/article/ forward-guidance-and-ecb.

Praet P., A.S. Guilhem and J.-P. Vidal (2019), "The single monetary policy: 20 years of experience", in "20 years of European Economic and Monetary Union: Conference proceedings", ECB Forum on Central Banking, 17-19 June 2019, Sintra Portugal, https://www.ecb.europa.eu/pub/pdf/sintra/ecb. forumcentbank201911~e0dd97f2c0.en.pdf: 88-112.

Reichlin L., A. Turner, M. Woodford (2019), "Helicopter money as a policy option", https://voxeu.org/article/helicopter-money-policy-option.

Rogoff K.S. (2003), "Globalisation and global disinflation", in *Monetary policy and uncertainty: adapting to a changing economy*, a symposium sponsored by the Federal Reserve Bank of Kansas City, 28-30 August, Jackson Hole: 77-112.

Rogoff K.S. (2016), *The Curse of Cash,* Princeton & Oxford: Princeton University Press.

Rostagno M., C. Altavilla, G. Carboni, W. Lemke, R. Motto, A.S. Guilhem, J. Yiangou (2019), "A tale of two decades: the ECB's monetary policy at 20", *Working Paper* No. 2346, European Central Bank (ECB).

Saka O. (2020), "Banks and government bonds: A love story", https://voxeu.org/ article/banks-and-government-bonds-love-story.

Samarina A. and N. Apokoritis (2020), "Evolution of monetary policy frameworks in the post-crisis environment", *Working Paper* No. 664, De Nederlandsche Bank (DNB).

Sandbu M. (2015), *Europe's Orphan: The Future of the Euro and the Politics of Debt,* Princeton & Oxford: Princeton University Press.

Shirai S., E.A. Sugandi (2019), "The cash hoarding puzzle", https://voxeu.org/ article/ cash-hoarding-puzzle-and-rising-global-demand-cash.

Schoenmaker D. (2019), "Greening monetary policy", *Working Paper,* Issue 02, Bruegel.

Smets F. (2003), "Maintaining price stability: how long is the medium term?", *Journal of Monetary Economics,* 50(6): 1293-1309.

Sturm J.-E. and T. Wollmershäuser (2008), "The Stress of Having a Single Monetary Policy in Europe", *Working Paper* No. 2251, Category 6: Monetary Policy and International Finance, CESifo.

Svensson L.E.O. (1997), "Inflation forecast targeting: Implementing and monitoring inflation targets", *European Economic Review,* 41(6): 1111-1146.

The Economist (1999), "The Navigators: A Survey of the World Economy", September 25th 1999.

Tooze A. (2018), *Crashed: How a Decade of Financial Crises Changed the World,* London: Allen Lane.

Trichet J.-C. (2011), "Remarks at the farewell event", Speech by Jean-Claude Trichet, President of the ECB, Frankfurt am Main, 19 October 2011, https://www.ecb.europa.eu/press/ key/date/2011/html/sp111019.en.html.

Tucker P. (2018), *Unelected Power: The Quest for Legitimacy in Central Banking and the Regulatory State,* Princeton & Oxford: Princeton University Press.

Wendschlag M. (2018), "Central Bankers in Twelve Countries between 1950 and 2000: The Making of a Global Elite", in Y. Cassis and G. Telesca (eds) *Financial Elites and European Banking: Historical Perspectives,* New York: Oxford University Press: 182-208.

White W.R. (2013), "Is Monetary Policy a Science? The Interaction pf Theory and Practice Over the Last 50 Years", *Working Paper* No. 155, Federal Reserve Bank of Dallas – Globalization and Monetary Policy Institute.

Wolf M. (2019), "How the euro helped Germany avoid becoming Japan", *Financial Times*, October 29, 2019.

Wyplosz C. (2003), "The New Eurosystem", Briefing Notes to the Committee for Economic and Financial Affairs of the European Parliament.