

The New European Central Bank

Taking Stock and Looking Ahead

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The ECB's Collateral Framework from the 1990s until the Pandemic

Jens van 't Klooster

I. Introduction

The implementation of monetary policy involves lending to banks as well as purchases of financial assets. Since banks and issuers can default, these operations unavoidably expose central banks to financial risk. In this chapter, I analyse how the European Central Bank (ECB) has dealt with risk, focusing on its refinancing operations, from its creation in the 1990s to until 2020. I highlight changes to the role of the central bank that cast serious doubt on whether its risk management strategy is still up to date, and propose ways to revise the ECB's current approach to financial risk.¹

Before the start of the 2010–12 euro area crisis, the ECB's understanding of its role in financial markets was relatively straightforward, which made risk management relatively simple. Although its legal mandate gives the ECB the task to not only implement but also 'define' the euro area's monetary policy, the ECB ascribed to itself a narrow role in pursuing low inflation by setting short-term interest rates.² The design of monetary policy operations always involved choices. However, in designing its operations to influence short-term rates, the ECB would mostly follow market practices and focus on protecting itself against risk.

To protect itself against counterparty default, the ECB asks banks to post collateral. Central bank collateral is an asset pledged by a borrower that the central bank acquires if the borrower defaults. By accepting high-quality collateral, the central bank can ensure a very high level of protection against losses. However, although the ECB Statutes require that any credit transactions with financial market participants be 'based on adequate collateral', the interpretation of 'adequate' is left entirely to the ECB.³ Hence,

¹ ECB, 'The Financial Risk Management of the Eurosystem's Monetary Policy Operations (ECB 2015) <https://www.ecb.europa.eu/pub/pdf/other/financial_risk_management_of_eurosystem_monetary_policy_operations_201507.en.pdf> accessed 13 April 2021 (hereafter ECB, 'The Financial Risk Management of the Eurosystem's Monetary Policy Operations').

² Hanspeter Scheller, *The European Central Bank: History, Role and Functions* (2nd edn, European Central Bank 2006) (hereafter Scheller, *The European Central Bank*); Otmar Issing, *The Birth of the Euro* (CUP 2008) (hereafter Issing, *The Birth of the Euro*); Jens van 't Klooster and Clément Fontan, 'The Myth of Market Neutrality: A Comparative Study of the European Central Bank's and the Swiss National Bank's Corporate Security Purchases' (2020) 25 *New Political Economy* 865 (hereafter van 't Klooster and Fontan, 'The Myth of Market Neutrality'); consolidated version of the Treaty on the Functioning of the European Union [2012] OJ C326/01 (hereafter TFEU), Art 127.

³ TFEU (n 2) Protocol No 4 On Statute of the European System of Central Banks and the European Central Bank, Art 18.

the choices that the ECB makes in how to deal with risk have an unacknowledged significance within the broader constitution of the EMU.

From the European Monetary Institute (EMI) onwards, which between 1994 and 1998 set out to create the ECB, there have always been lively debates on how to design monetary policy operations. Before the euro area crisis, these debates tended to focus on what assets were sufficiently safe to count as collateral for ECB refinancing operations. Central bankers were also concerned to limit the impact of collateral rules and other choices on market prices. The price of risk, as it was assumed, should be left to market-based price discovery. These assumptions became the basis for the sophisticated Single List of Eligible Collateral in 2006, which replaced a two-tier system that had been in place since 1998. The risk management strategy that informed the Single List ascribes a crucial role to private credit ratings and other risk management practices that became prevalent at the time. Implicit in that strategy was the belief that financial markets would be efficient and that monetary policy should, therefore, focus on the real economy objective of price stability.

Since 2010, however, that complacent view of financial markets has been undermined by repeated failures of European financial markets to adequately price risk. The euro area crisis saw far-reaching and self-enforcing negative spirals between the government finances of the individual Member States and the stability of their domestic banking sector.⁴ A crucial role in those crisis dynamics went to private credit rating agencies, whose pivotal role in European financial markets is bolstered by their prominent role in ECB risk management practices.⁵ More recently, the ECB has increasingly sought to incorporate environmental and climate-related considerations into its monetary policy operations. Meanwhile, the ECB's official risk management strategy, last updated in 2015, remains informed by the pre-2010 priorities of protecting itself against losses and minimizing its impact on financial markets.

A key question that the ECB faces in the review of its monetary policy strategy is how to deal with risk in these new circumstances. To deal with its new challenges in managing risk, the ECB should clarify under what conditions its objective of minimizing losses is decisive and when risk management should bow to other ECB policy objectives such as financial stability and environmental sustainability. The ECB should also give up on its policy of market neutrality in favour of what I describe as a policy of 'market attentiveness'. To ensure that its policy priorities are duly reflected in its

⁴ Paul De Grauwe, 'The European Central Bank: Lender of Last Resort in the Government Bond Markets?' (2011) CESifo Working Paper Series No 3569 <https://papers.ssrn.com/sol3/papers.cfm?abstract_id=1927783> accessed 13 April 2021; Heather D Gibson, Stephen G Hall, and George S Tavlvas, 'Self-Fulfilling Dynamics: The Interactions of Sovereign Spreads, Sovereign Ratings and Bank Ratings during the Euro Financial Crisis' (2017) 73 JIMF 371; Nicola Gennaioli, Alberto Martin, and Stefano Rossi, 'Banks, Government Bonds, and Default: What do the Data Say?' (2018) 98 Journal of Monetary Economics 98.

⁵ Daniela Gabor and Cornel Ban, 'Banking on Bonds: The New Links between States and Markets' (2016) 54 JCMS 617; Gregory Claeys and Ines Goncalves Raposo, 'Is the ECB Collateral Framework Compromising the Safe-Asset Status of Euro-Area Sovereign Bonds?' (*Bruegel*, 8 June 2018) <<http://bruegel.org/2018/06/is-the-ecb-collateral-framework-compromising-the-safe-asset-status-of-euro-area-sovereign-bonds/>> accessed 13 April 2021 (hereafter Claeys and Goncalves Raposo, 'Is the ECB Collateral Framework Compromising the Safe-Asset Status of Euro-Area Sovereign Bonds?'); Athanasios Orphanides, 'Monetary Policy and Fiscal Discipline: How the ECB Planted the Seeds of the Euro Area Crisis' (*VoxEU*, 9 March 2018) <<https://voxeu.org/article/how-ecb-planted-seeds-euro-area-crisis>> accessed 13 April 2021 (hereafter Orphanides, 'Monetary Policy and Fiscal Discipline').

operations and the broader financial markets that they shape, the ECB should expand its own internal credit rating facilities. To calibrate its priorities and clarify the status of its ambiguous mandate, the ECB should enhance coordination with the EU's political institutions.

The chapter is structured as follows. Section II analyses the early history of the ECB collateral framework and the turn to a market-based approach to risk in the mid-2000s. Section III discusses how developments after 2010 forced the ECB to pay more attention to the financial market impact of its risk management strategy; both to the pro-cyclical dynamics in sovereign bond markets and the climate impact of bond issuers. Section IV puts forward four recommendations for how the ECB should deal with these new challenges. Section V concludes.

II. ECB Risk Management before 2010

The monetary operations of the ECB involve transactions with private and public sector counterparties that expose it to financial risk.⁶ There is, however, no clear answer in the ECB's mandate to the question of how to manage these risks, which the ECB needs to decide itself. That is not a simple matter and the ECB has only had a harmonized risk management strategy since 2006.

How the central bank manages risk has pervasive impact on financial markets, public finance, and the allocation of capital in the real economy. Because of the central bank's pivotal role in the financial system, an asset that can potentially be pledged as collateral at the central bank is more cash-like; it provides immediate access to the means of payment at the top of the monetary hierarchy.⁷ Collateral eligibility makes the asset more attractive to hold for banks and other investors, which are always potentially liquidity constrained. Financial markets, therefore, tend to copy central bank eligibility criteria for transactions between private sector counterparties.⁸ Where central banks implement monetary policy through outright purchase, this not only affects long-term rates, but also the financing costs of eligible issuers.⁹

⁶ The historical account of the ECB collateral framework builds on Jens van 't Klooster, *The Political Economy of Central Bank Risk Management* (PhD Thesis University of Groningen 2021) and Jens van 't Klooster, 'The Politics of the ECB's Market-Based Approach to Government Debt' (2022) *Socio-Economic Review* <DOI: <https://doi.org/10.1093/ser/mwac014>> accessed 13 April 2021. The focus in the following is on financial risk in monetary policy operations. ECB and NCBs, eg, also take on risk through own funds, employee pensions, and through central bank swaplines.

⁷ Perry Mehrling, *The New Lombard Street: How the Fed Became the Dealer of Last Resort* (Princeton University Press 2011); Katharina Pistor, 'A Legal Theory of Finance' (2013) 41 *Journal of Comparative Economics* 315.

⁸ BIS, 'Central Bank Collateral Frameworks and Practices' (2013) Markets Committee Paper 6 <<https://www.bis.org/publ/mktc06.pdf>> accessed 13 April 2021 (hereafter BIS, 'Central Bank Collateral Frameworks and Practices'); Daniela Gabor and Cornel Ban, 'Banking on Bonds: The New Links between States and Markets' (2016) 54 *JCMS* 617 (hereafter Gabor and Ban, 'Banking on Bonds'); Manmohan Singh, 'Collateral Reuse and Balance Sheet Space' (2017) IMF Working Paper No 17/113 <<https://www.imf.org/en/Publications/WP/Issues/2017/05/08/Collateral-Reuse-and-Balance-Sheet-Space-44892>> accessed 13 April 2021.

⁹ Georgios Georgiadis and Johannes Gräßl, 'Global Financial Market Impact of the Announcement of the ECB's Asset Purchase Programme' (2016) 26 *Journal of Financial Stability* 257; Nordine Abidi and Ixart Miquel-Flores, 'Who Benefits from the Corporate QE? A Regression Discontinuity Design Approach' (2018) ECB Working Paper Series April 2018 <<https://econpapers.repec.org/paper/ecbecwps/20182145.htm>> accessed 13 April 2021.

When the European community initiated the process of monetary unification, the task of the central bank was meant to be simple.¹⁰ At the time sometimes referred to as 'Eurofed', it was meant to pursue price stability. In the background of that simple objective were a set of ideas about money and the economy, popularized by Milton Friedman, that deny that monetary policy can make a lasting contribution to the economy's productive capacity. Instead of serving any particular economic policy, the central bank is meant to achieve the well-defined objective of price stability by using one simple tool: setting interest rates.

In the ECB's pre-crisis self-understanding, setting rates was understood as a technical task, which involved the use of one instrument to pursue the clearly defined goal of price stability.¹¹ The discretion of the central bank was meant to be limited to finding the value of the instrument that allowed it to achieve that objective. The design of the instrument itself, moreover, was also deemed to be relatively straightforward. Although many operational frameworks allow central banks to set interest rates, central bankers argue that the choice of frameworks is primarily a matter of efficiency.¹²

The ECB would set interest rates using credit transaction in which the central bank lends to individual banks—what we today call 'conventional' operations. These transactions allow the central banks to steer interest rates in short-term money markets. The exact operations by which the ECB provides credit to the banking system have evolved considerably over the past decades.¹³ Before 2008, a fixed volume of credit was offered to the highest bidder in weekly Main Refinancing Operations (MROs). In October 2008, the financial market panic led the ECB to switch from this so-called variable rate fixed allotment system to a fixed-rate full allotment system, providing an unlimited volume of credit in weekly MROs. In response to the crisis, the ECB also introduced a fixed volume auction of three months or longer credit in its Long-Term and Targeted Longer-Term Refinancing Operations (LTROs and TLTROs), which for the past years have made up by far the largest volume of credit to the banking system.¹⁴

All these monetary policy operations involve credit to banks, which exposes the ECB to the risk of counterparty default.¹⁵ Although an actual default has happened in

¹⁰ Kathleen McNamara, *The Currency of Ideas: Monetary Politics in the European Union* (Cornell University Press 1998); Harold James, *Making the European Monetary Union* (Harvard University Press 2013).

¹¹ Scheller, *The European Central Bank* (n 2); Issing, *The Birth of the Euro* (n 2); van 't Klooster and Fontan, 'The Myth of Market Neutrality' (n 2).

¹² Claudio Borio, 'A Hundred Ways to Skin a Cat: Comparing Monetary Policy Operating Procedures in the United States, Japan and the Euro Area' (2001) BIS Working Papers No 9 <<https://www.bis.org/publ/bppdf/bispap09a.pdf>> accessed 13 April 2021.

¹³ Ulrich Bindseil, *Monetary Policy Operations and the Financial System* (OUP 2014) (hereafter Bindseil, *Monetary Policy Operations and the Financial System*); Massimo Rostagno and others, 'A Tale of Two Decades: The ECB's Monetary Policy at 20' (2019) ECB Working Paper Series No 2346 <<https://ideas.repec.org/p/ecb/ecbwps/20192346.html>> accessed 13 April 2021. See also chapter 2 by Vestert Borger and chapter 3 by Klaus Tuori, respectively, in this volume.

¹⁴ ECB, 'Tender Operations History' (ECB 2020) <https://www.ecb.europa.eu/mopo/implement/omo/html/top_history.en.html> accessed 13 April 2021.

¹⁵ Ulrich Bindseil, Fernando Gonzáles, and Evangelos Tabakis (eds), *Risk Management for Central Banks and Other Public Investors* (CUP 2009); Gareth Rule, 'Collateral Management in Central Bank Balance Policy Operations' (2012) Bank of England Centre for Central Banking Studies, 7 <<https://www.bankofengland.co.uk/ccbs/collateral-management-in-central-bank-policy-operations>> accessed 13 April 2021; ECB, 'The Financial Risk Management of the Eurosystem's Monetary Policy Operations' (n 1).

its entire history on only five occasions, the largest of which was the €8.5 billion default of Lehman Brother Bankhaus A.G. on the Bundesbank, risk management is an important day-to-day concern to the ECB. Accordingly, the ECB calibrates collateral requirements to protect itself against double default; default of not only the counterparty but also the issuer of the financial asset pledged as collateral.

While protecting itself against risk, however, the ECB also seeks to ensure that banks have sufficient collateral to secure their refinancing transactions.¹⁶ Because a bank that no longer has sufficient collateral defaults, the objective of providing banks with collateral weighs heavier than concerns about losses. Traditionally, central banks are meant to prioritize bank liquidity management over their own risk management concerns.¹⁷ In a financial market panic, central banks accept risky assets as part of the central bank's role as Lender of Last Resort. To stop a panic, as the nineteenth-century financial journalist Walter Bagehot wrote, the central bank should lend 'on every kind of current security, or every sort on which money is ordinarily and usually lent'.¹⁸

So, how does the ECB decide what assets are eligible as collateral? The ECB mandate does not provide it with much of an answer to that question.¹⁹ This is not the case for every central bank. There is, in fact, considerable variation in the extent to which central bank's mandates address the question of financial market risk management. Before the introduction of the euro, the mandates of European National Central Banks (NCBs) often had detailed provisions governing eligible assets.²⁰ The Bundesbank, for example, would not have been permitted to pursue a Quantitative Easing programme targeted on private sector assets.²¹ To this day, the Federal Reserve Act requires that open market operations rely on Treasuries and agency-bonds.²²

¹⁶ Ulrich Bindseil and Francesco Papadia, 'Credit Risk Mitigation in Central Bank Operations and Its Effect on Financial Markets: The Case of the Eurosystem' (2006) ECB Occasional Paper Series 49 <<http://dx.doi.org/10.1017/CBO9780511575716.009>> accessed 13 April 2021; Ulrich Bindseil and others, 'The Eurosystem Collateral Framework Explained' (2017) ECB Occasional Paper Series 189 <<https://www.ecb.europa.eu/pub/pdf/scpops/ecb.op189.en.pdf>> accessed 13 April 2021 (hereafter Bindseil and others, 'The Eurosystem Collateral Framework Explained').

¹⁷ Michael D Bordo, 'The Lender of Last Resort: Alternative Views and Historical Experience' (1990) 76 FRB Richmond Economic Review 18; Paul Tucker, 'The Lender of Last Resort and Modern Central Banking: Principles and Reconstruction' in Bank for International Settlements (ed), *Re-Thinking the lender of last resort* (79 BIS Papers Chapters 10, BIS 2014).

¹⁸ Walter Bagehot, *Lombard Street: A Description of the Money Market* (John Wiley & Sons 1999) 199.

¹⁹ René Smits, *The European Central Bank, Institutional Aspects* (Kluwer 1997); Christos V Gortsos, *European Central Banking Law: The Role of the European Central Bank and National Central Banks under European Law* (Palgrave Macmillan 2020); Nik de Boer and Jens van 't Klooster, 'The ECB, the Courts and the Issue of Democratic Legitimacy after Weiss' (2020) 57 CML Rev 1689 (hereafter de Boer and van 't Klooster, 'The ECB, the Courts and the Issue of Democratic Legitimacy after Weiss').

²⁰ EMI, 'Eligible Instruments for Mobilisation and Pledging during Stage 3 of EMU' (Monetary Policy Sub-Committee Task Force on Eligible Debt Instruments for Mobilization and Pledging, European Monetary Institute 1995), 3 (hereafter EMI, 'Eligible Instruments for Mobilisation and Pledging during Stage 3 of EMU').

²¹ Deutsche Bundesbank, 'The law concerning the Deutsche Bundesbank' (Deutsche Bundesbank 1957) <<https://www.bundesbank.de/en/publications/reports/monthly-reports/monthly-report-august-1957-704612>> accessed 13 April 2021, Art 21(1) (hereafter Deutsche Bundesbank, 'The law concerning the Deutsche Bundesbank').

²² Federal Reserve Act, Art 14(2). Article 13 allows lending to individuals, partnerships, and corporations in 'unusual and exigent circumstances' such as the 2020 pandemic.

Compared to these central banks, the ECB's mandate places only a few constraints on its risk management strategy.²³ The absence of clear operational provisions reflects the fact that the ECB's task is not just to exercise specific powers conferred to it by the mandate, but also to 'define and implement monetary policy'.²⁴ Article 18 of the ECB and European System of Central Banks (ESCB) Statute permits 'buying and selling outright (spot and forward) or under repurchase agreement and by lending or borrowing claims and marketable instruments, whether in euro or other currencies' as well as trading in precious metals. The ECB and NCBs are also allowed to 'conduct credit operations with credit institutions and other market participants, with lending being based on adequate collateral'. However, what it means for collateral to be adequate is unclear. For example, should adequacy be read to require minimizing losses or does it refer to a broader set of considerations concerning the central bank's market. This is not an arcane question nor is it new. The traditional role of Lender of Last Resort already suggests that the ECB should take into account bank liquidity management in setting its collateral standards. Even if 'adequate' is read to imply minimizing losses, however, lending to private sector counterparties always involves some risk, and the mandate does not say what sort of risk the ECB can permissibly take. Outright purchases do not involve collateral and, hence, the provision does not apply.

Despite the vagueness of its mandate where it concerns risk management and other operational aspects of the ECB, its pre-2008 self-understanding saw its discretion as narrowly circumscribed by the price stability objective:

Competency for monetary policy is transferred within the limits and the conditions of a mandate which clearly defines the objective of monetary policy and thus limits the amount of legally permitted discretion that the decision-making bodies of the ECB can use in conducting monetary policy.²⁵

To this day, ECB officials often confidently assert that principles such as market neutrality or the requirement to minimize losses on monetary policy operations have a firm foundation in the ECB's mandate.²⁶ However, historically, there was much less agreement about how to deal with risk, and the rules that govern ECB operations result from long internal discussions.

The question what assets to accept as collateral first emerged at the EMI, which between its creation in 1994 and the publication of the first ECB General Documentation in 1998 designed the operational framework of the new central bank.²⁷ As the EMI

²³ TFEU (n 2) Arts 119, 124, 125, and 126.

²⁴ Deutsche Bundesbank, 'The law concerning the Deutsche Bundesbank' (n 21) Art 3; TFEU (n 2) Art 127(2).

²⁵ Scheller, *The European Central Bank* (n 2) 127.

²⁶ Yves Mersch, 'Central Bank Risk Management in Times of Monetary Policy Normalisation' (International Risk Management Conference, Paris, 8 June 2018) <<https://www.ecb.europa.eu/press/key/date/2018/html/ecb.sp180608.en.html>> accessed 13 April 2021; Jens Weidmann, 'Climate Change and Central Banks' (Financial Markets Conference, Frankfurt am Main, 29 October 2019) <<https://www.bundesbank.de/en/press/speeches/climate-change-and-central-banks-812618>> accessed 13 April 2021.

²⁷ Mats Galvenius and Paul Mercier, 'The Story of the Eurosystem Framework' in Paul Mercier and Francesco Papadia (eds), *The Concrete Euro: Implementing Monetary Policy in the Euro Area* (OUP 2011) 115–214; EMI, 'Eligible Instruments for Mobilisation and Pledging during Stage 3 of EMU' (n 20).

Table 4.1 The two-tiered system of eligible collateral

	Tier-I (ECB list)	Tier-II (NCB lists)
Type of asset	Marketable debt instruments	Marketable and non-marketable debt instruments Equities traded on a regulated market.
Settlement procedures	Instruments must be centrally deposited with NCBs or a central securities depository	Assets must be easily accessible to the National Central Bank which has included them in its Tier-II list.
Credit standard	High credit standards are decided by the ECB but no clear standards are published	High credit standards are decided by the NCB
Risk-sharing	Yes	No

Source: © European Central Bank, Frankfurt am Main, Germany

ECB, 'The Single Monetary Policy in Stage Three: General Documentation on ESCB Monetary Policy Instruments and Procedures' (ECB 1998) 43 <<https://www.ecb.europa.eu/press/pr/date/1998/html/pr980918.en.html>> accessed 13 April 2021.

legal department at the time already acknowledged, there are 'no explicit rules prescribing or precluding the ECB and NCBs from accepting certain types of collateral'.²⁸ Deciding what assets to accept as collateral is also difficult because financial market practices and central bank operational frameworks differ immensely between the Member States. The most basic question in the design of the collateral framework is what types of assets to accept as collateral. One option is to accept only government bonds as the Federal Reserve does to this day. An exploratory study conducted at the time estimated that an operational framework for the ECB involving only public debt would have provided banks with sufficient collateral.²⁹ Despite everything that happened in-between, this remains true today. However, although some favoured this option, the EMI decided that the ECB should also accept debt issued by financial and non-financial issuers. For the ECB, government bonds currently make up less than 18 per cent of assets used to secure conventional monetary policy operations. This set the EMI on a cantankerous journey of finding risk management practices that would be acceptable to all NCBs.

The question of what assets to accept as collateral was not successfully resolved at the EMI and, in fact, it took until 2006 for the ECB to harmonize its collateral requirements.³⁰ Instead of a harmonized list, the EMI's Monetary Policy Sub-Committee adopted a so-called two-tiered system (see Table 4.1). Under the two-tiered system,

²⁸ EMI, 'Legal Issues Relating to Collateral' (General Secretariat Annex to Report of the Task Force on Eligible Debt Instruments for Mobilisation and Pledging, European Monetary Institute 1995), 7.

²⁹ EMI, 'Eligible Instruments for Mobilisation and Pledging during Stage 3 of EMU' (n 20) 7.

³⁰ Guideline of the European Central Bank of 31 August 2006 amending Guideline ECB/2000/7 on monetary policy instruments and procedures of the Eurosystem (ECB/2006/12) [2006] OJ L352/1.

the ECB set its own Tier-I list for eligible assets. It included government debt, but also corporate debt with a sufficiently high credit rating. The Eurosystem NCBs were permitted to create a Tier-II list of assets that were deemed important for their domestic financial markets but are not part of the Tier-I list. In practice, central banks could add almost anything they liked to their Tier-II list so that Tier-II lists quickly came to include a vast range of assets. The Dutch, Spanish, and Portuguese central banks, for example, allowed companies to pledge liquid shares from companies listed on their national stock markets.³¹

Despite the divergent operational practices, risk management standards became harmonized with the creation of a Single List of Eligible Collateral in 2006, which replaced the two-tier system that had been in place since the start of the Economic and Monetary Union.³² Under this approach, the ECB protects itself against losses through credit quality requirements on eligible assets and the risk controls that are both harmonized using sophisticated risk management techniques. These techniques derive from private sector risk management and accordingly have a narrow focus on minimizing losses. This approach, despite all the changes made to the collateral framework during the crisis, remains broadly in place today.³³

First, consider credit quality requirements. The Single List evaluates credit quality in terms of annualized probabilities of default. The core of the Single List is the Eurosystem Credit Assessment Facility (ECAF), which sets minimum credit standards for individual assets that banks wish to post (See Table 4.2). The ECAF allows banks to draw on credit assessments from a wide range of sources: private credit rating agencies such as Moody's and S&P, credit ratings issued by Eurosystem NCBs, as well as ratings from the internal risk-models of banks and other third-party rating tools. The ECAF maps ratings from all these sources onto a harmonized scale. Credit quality steps (CQS) 1 to 3 correspond to investment grade ratings, while steps 4 and 5 are junk bond territory. In the process of introducing its Single List and harmonizing eligibility criteria, the ECB announced a minimum credit rating requirement for sovereign debt.³⁴ This means that from then on only debt issued by Member States with a sufficiently high ECAF rating is eligible as ECB collateral. In practice, the only ratings

³¹ Ulrich Bindseil, *Monetary Policy Implementation: Theory--Past--Present* (OUP 2004) 161.

³² European Central Bank, 'The Single List in the Collateral Framework of the Eurosystem' (2006) ECB Monthly Bulletin May 2006, 75–87 <https://www.ecb.europa.eu/pub/pdf/other/pp75-87_mb200605en.pdf> accessed 13 April 2021; European Central Bank, 'The Implementation of Monetary Policy in the Euro Area—General Documentation on Eurosystem Monetary Policy Instruments and Procedures' (ECB 2006) <<https://www.ecb.europa.eu/pub/pdf/other/gendoc2006en.pdf>> accessed 13 April 2021 (hereafter European Central Bank, 'The Implementation of Monetary Policy in the Euro Area—General Documentation on Eurosystem Monetary Policy Instruments and Procedures').

³³ European Central Bank, 'The Eurosystem Collateral Framework throughout the Crisis' (2013) ECB Monthly Bulletin July 2013, 72 <https://www.ecb.europa.eu/pub/pdf/other/art1_mb201307en_pp71-86en.pdf> accessed 13 April 2021 (hereafter European Central Bank, 'The Eurosystem Collateral Framework throughout the Crisis'); Bindseil and others, 'The Eurosystem Collateral Framework Explained' (n 16). Guideline (EU) 2015/510 of the ECB of 19 December 2014 on the implementation of the Eurosystem monetary policy framework (ECB/2014/60) [2015], OJ L91/3, last amended by Decision (EU) 2020/506 of the European Central Bank of 7 April 2020 [2020] OJ L109/1.

³⁴ Jean-Claude Trichet, 'Introductory statement with Q&A' (Press conference, Frankfurt am Main, 7 April 2005) <<https://www.ecb.europa.eu/press/pressconf/2005/html/is050407.en.html>> accessed 13 April 2021; European Central Bank, 'The Implementation of Monetary Policy in the Euro Area—General Documentation on Eurosystem Monetary Policy Instruments and Procedures' (n 32).

Table 4.2 ECAF credit quality requirements

	Fitch / S&P	Moody's
CQS 1 & 2	AAA to A-	Aaa to A3
CQS 3 (eligible since November 2008)	BBB+ / BBB / BBB-	Baa1 / Baa2 / Baa3
CQS 4 (eligible at some NCBs under the 2011 ACC)	BB+	Ba1
CQS 5 (currently eligible for assets CSQ3 before 7 April 2020)	BB	Ba2

Source: © European Central Bank, Frankfurt am Main, Germany

European Central Bank, 'Eurosysteem credit assessment framework (ECAF)' (ECB 2020) <<https://www.ecb.europa.eu/paym/coll/risk/ecaf/html/index.en.html>> accessed 13 April 2021 (hereafter European Central Bank, 'ECAF').

available for sovereign debt are those issued by private credit rating agencies, so that they acquire a crucial role in determining whether government debt is eligible as ECB collateral.

In addition to the ECAF, the Single List manages risk through a Common Eurosystem Pricing Hub (CEPH) and a principled valuation haircut policy. Pricing an asset is important because it determines the value of the collateral posted to secure the loan. The ECB values collateral at its CEPH, which is operated by the Banque de France and the Bundesbank. For assets that are traded on a daily basis, the CEPH relies on market prices. For an estimated 78 per cent of marketable assets there are no sufficiently recent market prices and a theoretical model determines the price.³⁵ The ECB also accepts assets as collateral that are not traded in regulated markets, which are also priced using a theoretical model or based on the outstanding amount of the bond.³⁶ Depending on the ECAF credit quality step (and some other criteria such as maturity and coupon structure), the ECB applies a haircut to the collateral.³⁷ A haircut is a reduction of the value of an asset for the purpose of determining how much can be lent against it. For example, a haircut of 20 per cent means that an asset can be pledged to secure credit up to a value of 80 per cent of the asset. The value of the asset minus the haircut determines how much banks can borrow from the ECB.

The Single List introduced a high degree of harmonization and standardization into the ECB's risk management strategy. Still, there remained differences in the ways that the individual NCBs deal with financial risk and historical specificities. Every central

³⁵ Kjell G Nyborg, *Collateral Frameworks: The Open Secret of Central Banks* (CUP 2017) ch 7 (hereafter Nyborg, *Collateral Frameworks*).

³⁶ European Central Bank, 'Valuation' (ECB 2019) <<https://www.ecb.europa.eu/paym/coll/risk/valuation/html/index.en.html>> accessed 13 April 2021.

³⁷ Fernando González and Philippe Molitor, 'Risk Mitigation Measures and Credit Risk Assessment in Central Bank Policy Operations' in Evangelos Tabakis, Fernando González, and Ulrich Bindseil (eds), *Risk Management for Central Banks and Other Public Investors* (CUP 2009) 303–39; Guideline (EU) 2016/65 of the European Central Bank of 18 November 2015 on the valuation haircuts applied in the implementation of the Eurosystem monetary policy framework (ECB/2015/35) [2016] OJ L14/30.

bank has its own operational rulebook. The German Bundesbank, for example, has historically implemented its monetary policy by discounting covered bonds and trade bills.³⁸ To this day, it has a large credit rating facility for covered bonds and trade bills. Loans posted as collateral can be as small as €25,000. The Banque de France has historically accepted bank loans from non-financial companies. Today, the Banque de France visits 40,000 firms as part of a labour-intensive credit evaluation process. The Dutch central bank has historically had a much leaner system where banks mostly posted securitized mortgages as collateral, and this is still the case today. A minimum size-threshold of €1 million applies to any domestic non-marketable asset posted.³⁹

Despite such variation, the Single List sets clear rules for credit evaluation, asset pricing, and valuation haircuts. By following market practices, the ECB achieved a high degree of harmonization across the Eurosystem's wide range of eligible assets.

III. ECB Risk Management since 2010

The past decade, the ECB has made a set of amendments to its collateral framework that is almost impossible to chart, once more giving the NCBs considerable discretion over eligibility criteria for collateral. Through these changes, the ECB sought to ensure that banks had sufficient collateral to access its refinancing operations.⁴⁰ The ECB has also introduced a host of unconventional operations which expose it to new (and much greater) risk. Most fundamentally, however, events have increasingly forced the ECB to consider the financial market impact of its risk management strategy.

The ECB's response to the Great Financial Crisis of 2007 and 2008 relies on levers already available within the framework of the Single List.⁴¹ In October 2008, the ECB lowered its ECAF credit quality requirement to accommodate the shock of the Lehman Brothers default.⁴² By accepting assets with a CQS3 rating, the ECB greatly expanded the volume of collateral that banks could use to access ECB credit. It is part of the design of the ECAF requirement that could be lowered in response to a crisis, which the ECB collateral framework was accordingly well prepared for.

The euro area crisis, in contrast, forced the ECB to move considerably beyond its earlier risk management strategy in three ways. First, the impact of the euro area crisis was most severe in the Member States at the periphery of its financial system, which necessitated targeted changes to the operational framework. By 2012, 80 per cent of

³⁸ Deutsche Bundesbank, 'The Bundesbank's Credit Assessment System' (Deutsche Bundesbank 2020) s V.10.5 <<https://www.bundesbank.de/en/tasks/monetary-policy/collateral/credit-assessment/the-bundesbank-s-credit-assessment-system-744836>> accessed 13 April 2021.

³⁹ De Nederlandsche Bank, 'Monetary Policy Transactions Conditions' (De Nederlandsche Bank 2021) para 21 <https://www.dnb.nl/media/dynde3wo/monetary-policy-transactions-conditions_edition-january-2021-final.pdf> accessed 13 April 2021. The limit is €500,000 for cross-border use.

⁴⁰ Bindseil and others, 'The Eurosystem Collateral Framework Explained' (n 16); Nyborg, *Collateral Frameworks* (n 35).

⁴¹ European Central Bank, 'The Eurosystem Collateral Framework throughout the Crisis' (n 33); European Central Bank, 'Collateral Eligibility and Availability Follow-up to the Report on "Collateral Eligibility Requirements—a Comparative Study across Specific Frameworks"' (ECB 2014) <<https://www.ecb.europa.eu/pub/pdf/other/cea201407en.pdf>> accessed 13 April 2021.

⁴² Guideline of the European Central bank of 23 October 2008 amending Guideline ECB/2000/7 on monetary policy instruments and procedures of the Eurosystem (ECB/2008/13) [2009] OJ L36/31.

ECB credit went to just four Member States: Greece, Ireland, Italy, and Spain.⁴³ In response to the asymmetric impact of the crisis, the ECB introduced the Additional Credit Claims (ACC) framework in 2011.⁴⁴ The ACC allows NCBs to set up country-specific collateral requirements and apply lower credit quality standards.⁴⁵ This framework is essentially a return to the earlier two-tiered system.

A second way in which the euro area crisis forced the ECB to move beyond its earlier risk management strategy was that it saw the ECB engage in purchase programmes for a wide range of financial assets. The ECB started purchasing sovereign bonds as part of the Security Markets Programme in May 2010, which peaked at €220 billion in 2012.⁴⁶ In 2014, the ECB announced its quantitative easing Asset Purchase Programme (APP). By far the largest share of APP purchases are in the Public Sector Purchase Programme (PSPP), which in September 2020 made up €2.2 trillion out of a total of €2.8 trillion. However, the ECB has also bought corporate bonds (CSPP), covered bonds (CBPP 1, 2, and 3), and (in smaller volumes) asset-backed securities (ABSPP). The €1.85 trillion Pandemic Emergency Purchase Programme (PEPP) saw the ECB delve even deeper into outright purchases. Close to €7 trillion in December 2020, the ECB's balance sheet equals half the euro area's annual GDP.

From a risk management perspective, it is not just the size of the programmes but also the types of risk that come with the ECB's outright purchases that is new. A collateralized loan only results in losses in the event of double default. For an asset purchase this is not the case. Unlike covered bonds and asset-backed securities, some corporate bonds and in particular government bonds, are often not backed by an independent collateral pool. If the issuer defaults, the central bank faces unmediated losses. The ECB only needs to make a loss of 0.3 per cent on its APP programme for losses to be equal to the Lehman Brothers default.

The most important consequence of the euro area crisis, however, is that it increasingly forced the ECB to take the impact of its risk management strategy on financial markets into account. Consider first how the ECB is increasingly acknowledging that its risk management has consequences for financial stability.⁴⁷ According to dynamics

⁴³ Jean Pisani-Ferry and Guntram Wolff, 'Propping up Europe?' (2012) Bruegel Policy Contribution 2012/07 <https://www.bruegel.org/wp-content/uploads/imported/publications/pc_2012_02.pdf> accessed 13 April 2021.

⁴⁴ Guideline of the European Central Bank of 20 September 2011 on monetary policy instruments and procedures of the Eurosystem (ECB/2011/14) [2011] OJ L331/1.

⁴⁵ Evangelos Tabakis and Kentaro Tamura, 'The Use of Credit Claims as Collateral for Eurosystem Credit Operations' (2013) ECB Occasional Paper Series 148 <<https://www.ecb.europa.eu/pub/pdf/scpops/ecboep148.pdf>> accessed 13 April 2021; Bindseil and others, 'The Eurosystem Collateral Framework Explained' (n 16); Jean-Stéphane Mésonnier, Charles O'Donnell, and Olivier Toutain, 'The Interest of Being Eligible' (2017) Banque de France Working Papers No 636 <<https://publications.banque-france.fr/en/interest-being-eligible>> accessed 13 April 2021.

⁴⁶ Paul Wallace, *The Euro Experiment* (CUP 2015) 180.

⁴⁷ Bindseil, *Monetary Policy Operations and the Financial System* (n 13); BIS, 'Central Bank Collateral Frameworks and Practices' (n 8); Vítor Constâncio, 'Margins and Haircuts as a Macroprudential Tool' (ESRB international conference on the macroprudential use of margins and haircuts, Frankfurt am Main, 6 June 2016) <<https://www.ecb.europa.eu/press/key/date/2016/html/sp160606.en.html>> accessed 13 April 2021 (hereafter Constâncio, 'Margins and Haircuts as a Macroprudential Tool'); Gabor and Ban, 'Banking on Bonds' (n 8); Stefano Corradin, Florian Heider, and Marie Hoerova, 'On Collateral: Implications for Financial Stability and Monetary Policy' (2017) ECB Working Papers Series No 2107 <https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3067254> accessed 13 April 2021 (hereafter Corradin, Heider, and Hoerova, 'On Collateral: Implications for Financial Stability and Monetary Policy').

closely associated with the work of Hyman Minsky and Charles Kindleberger, markets move suddenly from a mania (leading investors to accept immense leverage) to a panic (in which all investors seek to liquidate their positions at the same time).⁴⁸ This general dynamic also plays out through pro-cyclical risk management practices: low-quality collateral requirements and haircuts are imposed in the mania, while the panic leads to higher haircuts and more strict collateral requirements.⁴⁹

It has long been understood that central banks can contribute to financial stability by taking on more risk in a crisis. The ECB risk management strategy directly impacts the value of collateral, which in turn affects both its counterparties and the issuers of eligible assets. By lowering its ECAF requirement and other collateral easing measures in October 2008, the ECB effectively counteracted the credit crunch in wholesale markets. While the lowering of the ECAF requirement was counter-cyclical, other design features of the Single List are pro-cyclical and hence can cause financial instability.⁵⁰ Since eligibility is conditional on an adequate ECAF rating, ratings downgrades reduce the volume of eligible collateral. Moreover, where possible, the ECB's pricing hub updates the value of collateral based on market prices so that lower prices require counterparties to post more collateral. Because the ECB's eligibility criteria for collateral and haircuts are conditional on ECAF requirements, rating downgrades lead the ECB to restrict the volume of credit available to banks. These mechanisms explain in part why, despite the ECB's efforts to expand eligibility during the euro area crisis, collateral shortage in some Member States still contributed to bank funding stress.⁵¹ In its March and April 2020 responses to the pandemic, the ECB had to take active measures to counteract this pro-cyclical bias of its risk management by broadening eligibility criteria, lowering its haircuts by 20 per cent, and freezing its rating requirement; downgraded assets remained eligible if they had been so before April 2020.⁵²

⁴⁸ Charles Poor Kindleberger and Robert Z Aliber, *Manias, Panics, and Crashes: A History of Financial Crises* (5th edn, Palgrave Macmillan 2005); Hyman P Minsky, *Stabilizing an Unstable Economy* (McGraw-Hill 2008).

⁴⁹ Markus K Brunnermeier, 'Deciphering the Liquidity and Credit Crunch 2007-2008' (2009) 23 *Journal of Economic Perspectives* 77; Gary Gorton and Andrew Metrick, 'Securitized Banking and the Run on Repo' (2010) Yale ICF Working Paper No 09-14 <https://papers.ssrn.com/sol3/papers.cfm?abstract_id=1440752> accessed 13 April 2021; Gary Gorton, *Slapped by the Invisible Hand. The Panic of 2007* (OUP 2010); BIS, 'The Role of Margin Requirements and Haircuts in Pro-cyclicality' (2010) BIS CGFS 36 <<https://www.bis.org/publ/cgfs36.htm>> accessed 13 April 2021; BIS, 'Central Bank Operating Frameworks and Collateral Markets' (2015) BIS CGFS Markets Committee Papers 53 <<https://www.bis.org/publ/cgfs53.htm>> accessed 13 April 2021; Daniela Gabor, 'The (Impossible) Repo Trinity: The Political Economy of Repo Markets' (2016) 23 *Review of International Political Economy* 967.

⁵⁰ Constâncio, 'Margins and Haircuts as a Macroprudential Tool' (n 47); Gabor and Ban, 'Banking on Bonds' (n 8); Corradin, Heider, and Hoerova, 'On Collateral: Implications for Financial Stability and Monetary Policy' (n 47); Vítor Constâncio, 'Completing the Odyssean Journey of the European Monetary Union' (ECB Colloquium on 'The Future of Central Banking', Frankfurt am Main, 16-17 May 2018) <<https://www.ecb.europa.eu/press/key/date/2018/html/ecb.sp180517.en.html>> accessed 13 April 2021 (hereafter Constâncio, 'Completing the Odyssean Journey of the European Monetary Union').

⁵¹ Jean Barthélemy, Vincent Bignon, and Benoît Nguyen, 'Illiquid Collateral and Bank Lending during the European Sovereign Debt Crisis' (2017) Banque de France Working Paper No 631 <https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2983683> accessed 13 April 2021; Jean Barthélemy, Vincent Bignon, and Benoît Nguyen, 'Monetary Policy and Collateral Constraints since the European Debt Crisis' (2018) Banque de France Working Paper No 669 <https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3144349> accessed 13 April 2021.

⁵² Luis de Guindos and Isabel Schnabel, 'Improving Funding Conditions for the Real Economy during the COVID-19 Crisis: The ECB's Collateral Easing Measures' (*The ECB Blog*, 22 April 2020 <<https://www.ecb.europa.eu/press/blog/date/2020/html/ecb.blog200422~244d933f86.en.html>> accessed 13 April 2021).

The financial stability implications of central bank risk management have been most pronounced for euro area sovereign debt. Without going into depth into the causes of the euro area crisis, which is treated elsewhere,⁵³ it is clear that the ECAF's minimum credit rating requirement and the haircut policies based on them had an important role in driving the crisis.⁵⁴ The possibility that Member State debt loses its status as central bank collateral adds to the financial market panic that strikes individual Member States. Although the ECB issued waivers for the eligibility requirement for Greece in April 2010, Ireland in March 2011, Portugal in July 2011, and Cyprus in July 2013, these waivers were discretionary. The conditions under which the ECB Governing Council provides them are vague. The ECB at the same time also placed specific demands on the crisis-struck Member States, which led to repeated accusations that the ECB used its risk management framework to coerce Member States into pursuing its preferred economic policies.⁵⁵

Moving beyond the topic of financial stability, a more recent challenge for ECB risk management has concerned its relation to the EU's environmental and climate-related objectives. Most major central banks, including the ECB, are involved today in the Network for Greening the Financial System (NGFS). Its members share the view that 'climate-related risks are a source of financial risk. It is therefore within the mandates of central banks and supervisors to ensure the financial system is resilient to these risks.'⁵⁶ As members of the NGFS recognize, climate risk is a source of at least two kinds of financial risk. First, physical risks. Without a dramatic change to human consumption and production, continued greenhouse gas emissions will lead to 'severe, pervasive and irreversible impacts for people and ecosystems.'⁵⁷ Climate change has already started and will result in more extreme weather events, droughts, fires, floods, and other potentially destructive events, which also impose losses on investors. The changes to economic policy that are needed to mitigate this evolution also give rise to so-called transition risks. Environmental degradation and loss of biodiversity come with an equally disruptive impact on the economy. An important objective of the NGFS is to ensure an adequate pricing of risk, since markets currently fail to adequately price financial risk resulting from climate change and other environmental

⁵³ See, eg, Jean Pisani-Ferry, *The Euro Crisis and its Aftermath* (OUP 2014).

⁵⁴ Claeys and Goncalves Raposo, 'Is the ECB Collateral Framework Compromising the Safe-Asset Status of Euro-Area Sovereign Bonds?' (n 5); Constâncio, 'Completing the Odyssean Journey of the European Monetary Union' (n 50); Orphanides, 'Monetary Policy and Fiscal Discipline' (n 5); Minh Nguyen, 'Collateral Haircuts and Bond Yields in the European Government Bond Markets' (2020) 69 *International Review of Financial Analysis* 101467.

⁵⁵ Thomas Beukers, 'The New ECB and its Relationship with the Eurozone Member States: Between Central Bank Independence and Central Bank Intervention' (2013) 50 *CML Rev* 1579; Athanasios Orphanides, 'ECB Monetary Policy and Euro Area Governance: Collateral Eligibility Criteria for Sovereign Debt' (2017) MIT Sloan Research Paper 5258-17 <<https://papers.ssrn.com/abstract=3076184>> accessed 13 April 2021.

⁵⁶ NGFS, 'A Call to Action: Climate Change as a Source of Financial Risk' (Network for Greening the Financial System First comprehensive report 2019) <<https://www.ngfs.net/en/first-comprehensive-report-call-action>> accessed 13 April 2021 (hereafter NGFS, 'A Call to Action: Climate Change as a Source of Financial Risk').

⁵⁷ Rajendra K Pachauri and others, 'Climate Change 2014: Synthesis Report. Contribution of Working Groups I, II and III to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change' in Rajendra K Pachauri and Leo Meyer (eds) (IPCC 2014) 8.

dimensions of economic policy.⁵⁸ In light of most governments' commitments under the 2015 Paris Agreement, there is also a case for more pro-active central bank efforts to promote a green economic transition.

The ECB has so far refrained from taking the environmental impact of its monetary policy operations into account.⁵⁹ Instead, for both its collateral framework and the ECB's Asset Purchase Programme, the eligibility of assets is determined solely by (i) its monetary policy objective of price stability and (ii) the financial risk that operations expose the central bank to. That approach, however, has given the ECB's operations a clear pro-carbon bias. The reason for this is that carbon-intensive firms such as utilities, companies engaged in fossil fuel extraction, and car manufacturers make large upfront investments. Because they need funding for this and the investments can themselves be used to secure bonds, these sectors rely disproportionately on bond financing. Hence, debt issued by such companies takes up a much larger share of the ECB's eligible assets than their relative size within the EU economy. The design of the ECB risk management is effectively a subsidy to large carbon-intensive firms. The ECB's CSPP has benefited car manufacturers such as BMW, Daimler, Renault, and Volkswagen; energy companies such as Eesti Energia (an early investor in US tar sand mines), ENEL, Repsol, and Shell; as well as civil and military aviation companies such as Ryanair and Thales. Its eligibility criteria bring down funding costs for carbon-intensive sectors, thereby encouraging more investment by firms in those sectors. This concern applies both to the ECB CSPP programme, in which it buys corporate bonds, as well as to the ECB collateral framework, which encourages ECB counterparties to hold those corporate bonds for the purposes of accessing its refinancing operations.

The absence of environmental criteria, however, is out of sync with the ECB's own increasingly sophisticated understanding of the environmental impact of financial markets.⁶⁰ For one, as part of its banking supervision mandate, the ECB also has a

⁵⁸ Jean-Francois Mercure and others, 'Macroeconomic Impact of Stranded Fossil Fuel Assets' (2018) 8 *Nature Climate Change* 588; Patrick Bolton and others, 'The Green Swan: Central Banking and Financial Stability in the Age of Climate Change' (2020) BIS Other <<https://www.bis.org/publ/othp31.htm>> accessed 13 April 2021 (hereafter Bolton and others, 'The Green Swan: Central Banking and Financial Stability in the Age of Climate Change'); Hugues Chenet and others, 'Finance, Climate-Change and Radical Uncertainty: Towards a Precautionary Approach to Financial Policy' (2021) *Ecological Economics* 183.

⁵⁹ Sini Matikainen, Emanuele Campiglio, and Dimitri Zenghelis, 'The Climate Impact of Quantitative Easing' (2017) Grantham Research Institute on Climate Change and the Environment Policy Paper May 2017 <<https://www.lse.ac.uk/granthaminstitute/publication/the-climate-impact-of-quantitative-easing/>> accessed 13 April 2021; Stefano Battiston and Irene Monasterolo, 'How Could the ECB's Monetary Policy Support the Sustainable Finance Transition?' (2019) FINEXUS: Center for Financial Networks and Sustainability 2019 <https://www.finexus.uzh.ch/en/news/cspp_sustainable_finance.html> accessed 13 April 2021; Dirk Schoenmaker, 'Greening Monetary Policy' (2019) Bruegel Working Paper No 02 <<http://bruegel.org/2019/02/greening-monetary-policy/>> accessed 13 April 2021; van 't Klooster and Fontan, 'The Myth of Market Neutrality' (n 2).

⁶⁰ NGFS, 'A Call to Action: Climate Change as a Source of Financial Risk' (n 56); ECB, 'Eurosysteem Reply to the European Commission's Public Consultations on the Renewed Sustainable Finance Strategy and the Revision of the Non-Financial Reporting Directive' (ECB 2020) <https://www.ecb.europa.eu/pub/pdf/other/ecb.eurosysteemreplyeuropeancommissionpublicconsultations_20200608~cf01a984aa.en.pdf> accessed 13 April 2021 (hereafter ECB, 'Eurosysteem Reply to the European Commission's Public Consultations on the Renewed Sustainable Finance Strategy and the Revision of the Non-Financial Reporting Directive'); ECB, 'Guide on Climate-Related and Environmental Risks' (ECB 2020) <<https://www.bankingsupervision.europa.eu/ecb/pub/pdf/ssm.202011finalguideonclimate-relatedandenvironmentalrisks~58213f6564.en.pdf>> accessed 13 April 2021; Isabel Schnabel, 'When Markets Fail—the Need for Collective Action in Tackling Climate Change' (European Sustainable Finance Summit, Frankfurt am Main, 28 September

task in ensuring that financial institutions adequately price the climate and environmental risks that they are exposed to. Monetary policy that fails to counteract the carbon-intensive bias of existing bank lending patterns enforces that market failure, thereby undermining the ECB's own supervisory efforts. Moreover, environmental and climate-related risks also impact the ECB's ability to achieve price stability. As Isabel Schnabel recently explained, 'the longer the risks of global warming are ignored and policy action delayed, the higher the risks of very large and persistent shocks to output and inflation.'⁶¹ The current review of the ECB's monetary policy strategy is likely to result in climate change being incorporated into the ECB's monetary policy framework. The major open questions today concern what shape its tasks should take.

IV. The Future of ECB Risk Management

Although the euro area crisis has forced the ECB to take the financial market impact of its operations into account, it has not yet incorporated its new lessons into its risk management strategy. In 2015, the ECB published a risk management strategy that summarizes the key principles that govern the design of monetary policy operations.⁶² They reflect an approach to risk that is broadly unchanged from that of the 2006 Single List. That is unfortunate because the ECB's risk management strategy is potentially a crucial site for contributing to its new policy priorities of financial stability and environmental sustainability.

In this concluding section, I will analyse the extent to which the ECB's current risk management strategy has withstood the test of time and how it should be revised in the review of the monetary policy strategy conducted by the ECB at the time of writing.⁶³ I first review the core principles of its risk management strategy and argue that the ECB should (A) revise and clarify the principle of risk-efficiency and (B) do away with risk-equivalence and the closely associated ideal of market neutrality. I then propose two broader institutional conditions for effectively dealing with the financial risk: improved internal credit rating facilities (C) and addressing legitimacy concerns by coordinating with EU political institutions (D).

2020) <https://www.ecb.europa.eu/press/key/date/2020/html/ecb.sp200928_1~268b0b672f.en.html> accessed 13 April 2021 (hereafter Schnabel, 'When Markets Fail—the Need for Collective Action in Tackling Climate Change'); Isabel Schnabel, 'Never Waste a Crisis: COVID-19, Climate Change and Monetary Policy' (Virtual Roundtable on 'Sustainable Crisis Responses in Europe' organized by the INSPIRE research network, 17 July 2020) <<https://www.ecb.europa.eu/press/key/date/2020/html/ecb.sp200717~1556b0f988.en.html>> accessed 13 April 2021 (hereafter Schnabel, 'Never Waste a Crisis: COVID-19, Climate Change and Monetary Policy'); Alessandro Ferrari and Valerio Nispi Landi, 'Whatever It Takes to Save the Planet? Central Banks and Unconventional Green Policy' (2020) ECB Working Paper Series No 2020/2500 <<https://www.ecb.europa.eu/pub/pdf/scpwps/ecb.wp2500~f7a50c6f69.en.pdf>> accessed 13 April 2021.

⁶¹ Schnabel, 'Never Waste a Crisis: COVID-19, Climate Change and Monetary Policy' (n 60). See also Schnabel, 'When Markets Fail—the Need for Collective Action in Tackling Climate Change' (n 60); Christine Lagarde, 'Climate Change and the Financial Sector' (Launch of the COP 26 Private Finance Agenda, London, 27 February 2020) <<https://www.bis.org/review/r200302c.htm>> accessed 13 April 2021 (hereafter Lagarde, 'Climate Change and the Financial Sector').

⁶² ECB, 'The Financial Risk Management of the Eurosystem's Monetary Policy Operations' (n 1).

⁶³ December 2020.

A. Revising the objectives of risk management

A first key principle of the risk management strategy that the ECB should consider revising is risk efficiency. Risk efficiency requires that in pursuing its monetary policy objectives, the ECB minimizes the risk of losses on its operations:

The Eurosystem aims to achieve its policy objectives with the lowest possible risk. In this sense, risk management means striving to ensure that the Eurosystem uses its risk capacity in the most efficient way in relation to the achievement of policy objectives.⁶⁴

The principle of risk efficiency makes risk management subordinate to the ECB's monetary policy objectives. As a consequence, risk management only takes into account the financial market impact of ECB operations to the extent that it affects an objective of the ECB. Several aspects of the ECB's current formulation of the principle of risk-efficiency should be revised and require further elucidation.

In practice, the ECB seeks to minimize the risk of losses through a minimum credit rating threshold, which ensures that only assets with a high credit rating are eligible as collateral or to be purchased in the APP. For assets pledged as collateral, as we saw, the ECB also imposes risk control measures to be able to recover any losses when selling the asset. Risk efficiency requires that the eligibility of individual assets is solely evaluated from a risk management perspective unless there are explicit policy objectives that justify taking on more risk.

The current formulation of the principle unduly limits the consideration of broader societal repercussions of its operations. Given the ECB's narrow conception of what counts as a monetary policy objective, the risk management strategy is similarly narrow in its ambitions. Beyond price stability, only financial stability has been given any significance in the ECB's strategic choices. The limited interpretation of its objectives is itself not settled by the Treaty, which also assigns to the ECB as a secondary objective to 'support the general economic policies in the Union with a view to contributing to the achievement of the objectives of the Union'.⁶⁵

As we saw in section III, ECB risk management has pervasive impact on sovereign bond markets. In relying on the ECAF's minimum credit rating requirement for determining the eligibility of sovereign debt, the ECB's risk management strategy does not take into account how this requirement affects the ability of governments to fund themselves in financial markets. For those who favour a narrow role for central banks, the fact that the principle of risk efficiency fails to take into account societal impact may also be considered a strength. Where it comes to government finance, the monetary financing prohibition in Article 123 TFEU may be taken to prohibit any explicit consideration. The ECJ, for example, has explicitly pointed to the ECAF requirements on ECB government bond purchases as part of the design feature of the OMT and

⁶⁴ ECB, 'The Financial Risk Management of the Eurosystem's Monetary Policy Operations' (n 1) 3.

⁶⁵ TFEU (n 2) Art 127(1).

PSPP that prevent illicit monetary financing.⁶⁶ However, the ECB has issued waivers for this rule and has not applied it in the design of the 2020 PEPP. Moreover, the ECB has also used its risk management strategy to pursue other objectives. The ECB's loan-level initiative for asset-backed securities imposed the requirement that for ABSs to be eligible, detailed quarterly data needs to be available in a standardized format.⁶⁷ The ECB itself explains, with reference to the loan-level initiative, that '[t]hrough its collateral framework, the Eurosystem can help to improve market functioning and the transparency of securitisation structures'.⁶⁸

The ECB should put forward a more principled account of what policy objectives it takes into account in its risk management. Waivers issued by the Governing Council for the minimum credit rating requirement are currently provided ad hoc and without much in the way of justification. The March 2020 changes to the eligibility of Greek government debt illustrate this well: if the journalistic account is correct, the issue was first raised by the Greek governor during a late-night video call.⁶⁹ It was decided on the spot to include Greek bonds. Similarly, in 2009 the ECB also tweaked its ECAF rules for sovereign debt by adding a small Canadian rating agency DBRS to the eligible rating providers. In 2015, Portugal would be eligible for the PSPP because the ECB relaxed the rules for its mapping of ratings by DBRS onto the ECAF scale.⁷⁰ ECB officials later claimed that the two decisions were unrelated, but that remains difficult to verify.⁷¹ Moreover, would it really be a case of 'favouritism' or 'misconduct' if that allegation were true? The ECB may also on occasion make risk management decisions based on more mundane criteria. For example, the rules for ABSs were loosened in reviews of the risk control framework in 2013 and 2016, which fitted the ECB's stated financial market objectives of reviving euro area securitization markets and building European capital markets.⁷²

Given that its risk management has financial stability implications, the ECB should provide a more principled account of how and when these considerations enter into the design of operations. When should risk management be used to achieve the ECB's

⁶⁶ See also Case C-62/14 *Gauweiler and Others v Deutscher Bundestag* [2015] EU:C:2015:400, para 125; Case C-493/17 *Weiss and Others* [2018] EU:C:2018:1000, paras 94–95.

⁶⁷ ECB, 'ABS Loan-Level Data Initiative' (ECB 2011) <https://www.ecb.europa.eu/paym/coll/loanlevel/shared/files/ABS_loan_level_initiative_letter.pdf?ca73ac293a520c3b8c1b603045cf0e84> accessed 13 April 2021; ECB, 'Loan-Level Initiative' (ECB 2020) <<https://www.ecb.europa.eu/paym/coll/loanlevel/html/index.en.html>> accessed 13 April 2021 (hereafter ECB, 'Loan-Level Initiative').

⁶⁸ ECB, 'Loan-Level Initiative' (n 67).

⁶⁹ Jana Radow and Piotr Skolimowski, 'Christine Lagarde's \$810 Billion Coronavirus U-Turn Came in Just Four Weeks' (*Bloomberg*, 7 April 2020) <<https://www.bloomberg.com/news/features/2020-04-06/coronavirus-lagarde-s-810-billion-u-turn-came-in-just-4-weeks>> accessed 13 April 2021.

⁷⁰ Nyborg, *Collateral Frameworks* (n 35) 95.

⁷¹ Bindseil and others, 'The Eurosystem Collateral Framework Explained' (n 16) 62.

⁷² See the very summary ECB Press Release, 'ECB further reviews its risk control framework allowing for a new treatment of asset-backed securities' (ECB 2013) <<https://www.ecb.europa.eu/press/pr/date/2013/html/pr130718.en.html>> accessed 13 April 2021; ECB, 'ECB Reviews Its Risk Control Framework for Collateral Assets' (ECB 2016) <https://www.ecb.europa.eu/press/pr/date/2016/html/pr161103_1.en.html> accessed 13 April 2021. See also Benjamin Braun and Marina Hübner, 'Fiscal Fault, Financial Fix? Capital Markets Union and the Quest for Macroeconomic Stabilization in the Euro Area' (2018) 22 *Competition & Change* 117; Daniela Gabor and Jakob Vestergaard, 'Chasing Unicorns: The European Single Safe Asset Project' (2018) 22 *Competition & Change* 139.

objectives? Can the ECB also take on more risk to promote market functioning and transparency?

B. Market attentiveness instead of market neutrality

The ECB should do away with its principle of risk-equivalence, since it implies a policy of market neutrality that is incompatible with its financial stability and environmental sustainability roles. Instead, the ECB should adopt a policy of market attentiveness.

Risk equivalence requires that the financial risk that the central bank accepts should be the same for each operation of a given type. It is derived from modern portfolio theory, where ensuring risk-equivalence minimizes the ECB's impact on the process of price discovery and thereby allows investors to achieve the most efficient allocation of resources.⁷³ In practice, it implies a market neutral approach to risk management. For the design of the collateral framework, this means that:

[a] collateral framework and its criteria and/or requirements should not lead to the preferential treatment of distinct asset classes, issuers or sectors and should avoid market distortion (implying that e.g. individual issuers or sectors benefit unduly from eligibility requirements).⁷⁴

Applied to the ECB asset purchases it requires that the ECB follows a benchmark that reflects the market value of eligible bonds.⁷⁵

The normative justification for market neutrality is that markets do best in achieving an efficient allocation of resources. This justification, however, is conditional on two assumptions.⁷⁶ First, the assumption that markets should be evaluated solely in terms of their efficiency, rather than taking into account a broader range of normative considerations. Second, that the striving for profit by individual firms and investors serves to achieve an efficient allocation of resources. This second assumption is generally justified with reference to the second theorem of welfare economics, which shows that profit-maximization in highly idealized markets indeed tends towards an efficient allocation. There are, however, a range of different ways to explain why market competition may serve to realize the most efficient allocation of resources.⁷⁷

Even if we grant that our evaluative criterion should be efficiency, the second assumption is today no longer tenable without qualification. The reasons that lead central bankers to pursue financial stability and environmental sustainability objectives should make us hesitant to assume that market dynamics will achieve an efficient allocation of resources. Because financial markets are inherently unstable, decentralized

⁷³ ECB, 'The Financial Risk Management of the Eurosystem's Monetary Policy Operations' (n 1) 3.

⁷⁴ Bindseil and others, 'The Eurosystem Collateral Framework Explained' (n 16) 12.

⁷⁵ European Central Bank, 'The ECB's Corporate Sector Purchase Programme: Its Implementation and Impact' (2017) 4 ECB Economic Bulletin 40.

⁷⁶ Allen Buchanan, *Ethics, Efficiency, and the Market* (Rowman & Littlefield 1985); Hsieh Nien-he and others, 'The Social Purpose of the Corporation' (2018) 6 *Journal of the British Academy* 49.

⁷⁷ See, eg, Joseph A Schumpeter, *Capitalism, Socialism, and Democracy* (Harper & Brothers Publishing 1942); Friedrich August Hayek, 'The Use of Knowledge in Society' (1945) 4 *American Economic Review* 519.

price discovery does not necessarily result in the most efficient allocation of resources. This is why central banks have turned to macroprudential policies. Similarly, central banks which today participate in the Network for Greening the Financial System do so because they believe that financial markets currently also fail to accurately price climate risk. The cheap price of carbon currently reflected in financial market prices has for good reasons been labelled 'the greatest market failure the world has ever seen'.⁷⁸ Following market practices in the implementation of monetary policy, therefore, hinders the ECB from achieving its own objectives. Although it may sometimes be appropriate to reduce the impact of operations on market prices, this should not be the default assumption.

Hence, instead of market neutrality, the ECB should adhere to a policy that may be described as market attentiveness. This attentiveness has two aspects. Facing existing private-sector risk practices, the ECB should ask whether they reflect the ECB's financial stability and environmental sustainability objectives. This would involve actively intervening to end pro-cyclical market practices and pushing for a more vigilant attitude to climate-related risk. In so doing, the ECB should not dogmatically adhere to the objective of risk equivalence. However, market attentiveness does not mean ignoring the ways in which markets price risk. Where appropriate the ECB can use private sector risk management techniques. It should also ensure that operations do not distort risk premia and relative asset prices. In this regard, market attentiveness involves acknowledging the complex interaction between monetary policy and financial markets.

As the euro area's most powerful investor it is only prudent for the ECB to pay attention when markets fail.

C. Developing internal credit rating facilities

What would revising risk efficiency and giving up on risk equivalence mean for the practice of monetary policy implementation? The first concrete proposal I want to make is that the ECB should expand its internal credit rating facilities to better reflect how credit ratings used for its operations impact its objectives.

Improving already existing internal credit risk rating facilities is a modest step forward. Within the Eurosystem, as we saw, the German Bundesbank and the Banque de France retain sizeable internal credit rating facilities, as do seven other NCBs.⁷⁹ Developing credit rating facilities also fits even the most conservative understanding of what central banks can be expected to do. As an independent agency, the ECB is hesitant to engage in deliberation on overtly political topics. Credit screening, in contrast, is something that central banks have always done. It involves technical questions of risk assessment, which are in principle clearly demarcated from the broader economic policy objectives of governments.

When it comes to financial risk, there are many different ways to monitor and evaluate risk. Where it comes to sovereign bonds and other assets, the ECB should

⁷⁸ Nicholas Stern, *The Economics of Climate Change: The Stern Review* (CUP 2007).

⁷⁹ ECB, 'ECAFI' (table 4.2).

stop intermittently relying on credit ratings and then side-stepping them in light of specific policy objectives. Instead, it should consider simply integrating relevant policy considerations into its own credit assessments. Although the ECB's new president Christine Lagarde has signalled her dissatisfaction with the ECB's reliance on private credit ratings, the ECB has not yet put forward an alternative approach.⁸⁰ The ECB can do this by replacing private credit ratings with internal risk assessment facilities.⁸¹

Extending internal risk management facilities is an effective way for central banks to contribute to their financial stability objectives and secondary objectives such as environmental sustainability. Because private credit ratings are pro-cyclical, the ECB's ECAF credit rating requirements also are.⁸² Instead of suspending the ECAF-rules in a crisis, as the ECB did again in April 2020, its rules should simply be made less dependent on the rating agencies.⁸³ Similarly, the mispricing of climate risk in financial markets results in part from specific limitations of existing private sector risk management techniques.⁸⁴ These techniques are backwards-looking in the sense that they are based on past performance and observations. They also tend to assume a fixed regulatory framework. To avoid stranded assets and other financial market effects of the climate transition the central bank should to some extent anticipate not just physical climate risk (eg extreme weather events) but also transition risks (a high carbon tax etc). Internal central bank rating facilities can do this. The loan-level initiative is a model for how such changes to the ECB's operational framework can in turn improve market functions.

It is currently an open question what shape ECB risk management should take, which is an issue on which central bank research is in its early stages.⁸⁵ The ECB's history, however, should make us optimistic. The creation of the Single List was the result of an earlier process of institutional learning in which the ECB developed effective internal procedures in response to the specific challenge of euro area heterogeneity. Finding risk management practices that are effective in promoting financial stability

⁸⁰ Christine Lagarde, 'Procyclical Impact of Downgrades of Corporate Bonds on Markets and Entities across the Financial System' (European Systemic Risk Board, Letter ESRB/2020/0089 2020) <https://www.esrb.europa.eu/pub/pdf/other/esrb.letter201001_impact_of_downgrades_of_corporate_bonds~d15087499d.en.pdf?663897b6b8d0af6e4a75657663d4d469> accessed 13 April 2021; Lagarde, 'Climate Change and the Financial Sector' (n 61).

⁸¹ See also the critical report of the Financial Stability Board on central banks' over-reliance on private credit assessment, which is referenced by ECB's 2015 risk management strategy: FSB, 'Principles for Reducing Reliance on CRA Ratings' (Financial Stability Board 2010) <https://www.fsb.org/wp-content/uploads/r_101027.pdf> accessed 13 April 2021; Pierre Monnin, 'Integrating Climate Risks into Credit Risk Assessment—Current Methodologies and the Case of Central Banks Corporate Bond Purchases' (Council on Economic Policies, 2018).

⁸² Patrick Bolton, Xavier Freixas, and Joel Shapiro, 'The Credit Ratings Game' (2012) 67 *Journal of Finance* 85; Heski Bar-Isaac and Joel Shapiro, 'Ratings Quality over the Business Cycle' (2013) 108 *Journal of Financial Economics* 62.

⁸³ ECB, 'ECB Takes Steps to Mitigate Impact of Possible Rating Downgrades on Collateral Availability' (ECB 2020) <https://www.ecb.europa.eu/press/pr/date/2020/html/ecb.pr200422_1~95e0f62a2b.en.html> accessed 13 April 2021.

⁸⁴ Dirk Schoenmaker and Willem Schramade, *Principles of Sustainable Finance* (OUP 2018); Bolton and others, 'The Green Swan: Central Banking and Financial Stability in the Age of Climate Change' (n 58).

⁸⁵ Corradin, Heider, and Hoerova, 'On Collateral: Implications for Financial Stability and Monetary Policy' (n 47); Bolton and others, 'The Green Swan: Central Banking and Financial Stability in the Age of Climate Change' (n 58); Oustry Antoine and others, 'Climate-Related Risks and Central Banks' (2020) Banque de France Working Paper No 790 <https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3771299> accessed 13 April 2021.

and environmental sustainability will also take time, but it can be done. Risk management on monetary policy operations can inform thinking in other policy domains, because it is a domain in which the central bank needs to think like an investor. By reflecting on how to deal with new risks on its monetary policy, central banks build expertise in relation to those risks.

To the extent that the credit ratings remain largely focused on estimating credit risk, central banks can pursue their financial stability and green objectives without wading into too deep political waters.

D. Addressing legitimacy concerns by coordinating with EU political institutions

The past years have seen central banks confronted with increasingly difficult choices, which central banks due to their constitutional status as independent agencies are ill-equipped to deal with.⁸⁶ Even when confronted with clear market failures, central bankers remain hesitant to intervene in the allocation of capital.

Although improving its risk management facilities can address some of the challenges that the ECB today faces, it remains the case that the ECB mandate provides almost no guidance on how to deal with financial risk. Issue after issue, its mandate simply does not say what the ECB should do. That is not surprising since it was written decades ago and has remained unchanged since then. The absence of explicit democratic authorization for its policies gives rise to what Nik de Boer and I have described in a recent article as authorization gaps.⁸⁷ There are gaps in the ECB's democratic authorization in the sense that the ECB is forced to make choices for which its mandate provides almost no guidance, but which have far-reaching consequences. A key example is the decision whether to accept bonds issued by a Member State as part of the ECB's collateral framework and asset purchase programmes. Similarly, the mandate leaves it to the ECB to decide whether to take into account the environmental impact of its operations, and if so how.

How should the ECB navigate such authorization gaps when it comes to risk management? The ECB can justify changes to its risk management strategy in terms of the price stability objective and its secondary mandate, but almost any change it makes can be justified in this way. This is the fundamental problem with the ECB's authorization gaps; the law has lost much of its role in guiding monetary policy. Authorization

⁸⁶ Claudio Borio, 'Central Banking Post-Crisis: What Compass for Uncharted Waters?' in Charles Goodhart and others (ed), *Central Banking at a Crossroads: Europe and Beyond* (Anthem Press 2014) 191–216; Willem Buiter, 'Central Banks: Powerful, Political and Unaccountable?' (2014) 2 *Journal of the British Academy* 269; Jacqueline Best, 'Rethinking Central Bank Accountability in Uncertain Times' (2016) 30 *Ethics & International Affairs* 215; Paul Tucker, *Unelected Power: The Quest for Legitimacy in Central Banking and the Regulatory State* (Harvard University Press 2018); Charles Goodhart and Rosa Lastra, 'Populism and Central Bank Independence' (2018) 29 *Open Economies Review* 49; Jens van 't Klooster, 'Democracy and the European Central Bank's Emergency Powers' (2018) 42 *Midwest Studies In Philosophy* 270; Jens van 't Klooster, 'The Ethics of Delegating Monetary Policy' (2020) 82 *Journal of Politics* 587; Leah Downey, 'Delegation in Democracy: A Temporal Analysis' (2020) *Journal of Political Philosophy* 1.

⁸⁷ de Boer and van 't Klooster, 'The ECB, the Courts and the Issue of Democratic Legitimacy after Weiss' (n 19).

gaps make the democratic basis of any actions—activist or not—thin. Acting to green the financial system is arguably less political than doing nothing, but that itself does not legitimize any particular choices. Deciding how to deal with climate risk will unavoidably force the ECB to take a stance not only on how it expects the transition to happen but also shapes how that transition happens.⁸⁸ However, it would be a mistake to infer from the absence of legal clarity that the ECB should do nothing. The same was true, as we saw, for the ECB's crisis OMT and PSP programmes. Today, few people think that the ECB should have done nothing instead. Whatever decision the ECB makes has far-reaching consequences.

To resolve the new questions that the ECB faces in managing risk, it should do more to coordinate its decision-making with the EU's political institutions. For one, the EU Council could help the ECB rank the many distinct objectives of EU economic policy listed in Article 3 of the Treaty on European Union (TEU) that is referenced in its secondary mandate. To this end, Article 121(2) TFEU already allows the EU Council to formulate 'the broad guidelines of the economic policies of ... the Union.' The European Parliament could also issue a motion on this issue.⁸⁹ Providing democratic guidance on how the ECB should rank its secondary objectives would not undermine the ECB's independence, nor, since they are secondary objectives, its price stability mandate. Similarly, Article 129(3) TFEU allows the Council and the European Parliament to make changes to key articles from the ECB Statutes.⁹⁰ This procedure could be used to amend Article 18 to specify eligibility criteria for the ECB's asset purchase programmes and collateral requirements.

The ECB, however, does not need to wait for the EU's political institutions to act. In 2012 the ECB resolved the issue of how to deal with sovereign debt, at least to some extent, by making eligibility for OMT conditional on an ESM programme. Similarly, the European Commission is currently developing a taxonomy of bonds that count as properly green.⁹¹ By relying on taxonomies developed by the political institutions of the EU, the ECB can outsource the decision on what counts as a transition risk. Although still in the early stages of development, better ESG-taxonomies will improve the ability of the ECB to contribute to the EU's economic policy objectives.⁹²

⁸⁸ Bolton and others, 'The Green Swan: Central Banking and Financial Stability in the Age of Climate Change' (n 58).

⁸⁹ See also Grégory Claeys and Marta Domínguez-Jiménez, 'How Can the European Parliament Better Oversee the European Central Bank?' (2020) European Parliament Monetary Dialogue Papers 652.747 <https://www.bruegel.org/wp-content/uploads/2020/09/1_BRUEGEL-final-Mart-and-Gregory.pdf> accessed 13 April 2021.

⁹⁰ This includes Art 17 (on ECB deposit facilities), Art 18 (on open market and credit operations), Art 22 (on clearing and payment systems; think Central Bank Digital Currencies), Art 23 (on external operations; think swap lines), and a range of articles at the end of the Statutes on central bank accounting and the distribution of profits.

⁹¹ Regulation (EU) 2020/852 of the European Parliament and of the Council of 18 June 2020 on the establishment of a framework to facilitate sustainable investment, and amending Regulation (EU) 2019/2088 [2020] OJ L198/13.

⁹² ECB, 'Eurosysteem Reply to the European Commission's Public Consultations on the Renewed Sustainable Finance Strategy and the Revision of the Non-Financial Reporting Directive' (n 60).

V. Conclusion

Since monetary policy is the most important economic competence entirely delegated to the EU-level, it is not surprising that, time and again, the ECB has been expected to act. When its mandate was drafted in the early 90s, the ECB was assigned the narrow task of maintaining price stability. Hence its mandate has little to say about objectives such as financial stability and environmental sustainability. Today, the ECB's official risk management strategy, last updated in 2015, remains informed by ideas from the ECB's pre-crisis self-understanding. Its priorities are simple: the ECB should protect itself against risk and otherwise follow market practices. However, the ECB has in practice already moved far beyond these priorities. Going forward it is neither likely nor desirable that the ECB return to its earlier detached approach to markets. Instead, it should set out principles for how policy priorities such as financial stability and environmental sustainability should inform its approach to risk. Instead of market neutrality, this should involve a policy of market attentiveness; following markets where appropriate but leaning against the wind where necessary. Two key institutional innovations to bring the ECB's risk management practices into the twenty-first century are: improve internal credit rating facilities and enhance political coordination for monetary policy implementation.