IN-DEPTH ANALYSIS

Requested by the ECON committee

Monetary Dialogue Papers, November 2023

European Parliament

Shades of Green Monetary Policy

Would a green tilt help?

Economic Governance and EMU Scrutiny Unit (EGOV)
Directorate-General for Internal Policies
PE 755.709 - November 2023

EN

Shades of Green Monetary Policy

Would a green tilt help?

Abstract

Any greening of monetary policy is likely to have at best a marginal effect on emissions given the very small spreads on the yields of green bonds and the cap on emissions inherent in the EU's emissions trading system.

Trying to limit the supply of capital to brown industries could backfire as these industries are those most in need of financing for capital-intensive decarbonisation.

These arguments apply both to the tilting of investments under the corporate sector purchase programme (CSPP) towards green industries/enterprises and to the potential greening of targeted long-term refinancing operations. Moreover, CSPP holdings will decline rapidly, so this prospective policy instrument will become irrelevant in a few years.

This document was provided by the Economic Governance and EMU Scrutiny Unit at the request of the Committee on Economic and Monetary Affairs (ECON) ahead of the Monetary Dialogue with the ECB President on 27 November 2023.

This document was requested by the European Parliament's Committee on Economic and Monetary Affairs.

AUTHORS
Daniel GROS, Bocconi University & CEPS
Farzaneh SHAMSFAKHR, CEPS

ADMINISTRATORS RESPONSIBLE
Giacomo LOI
Drazen RAKIC
Maja SABOL

EDITORIAL ASSISTANT
Adriana HECSER

LINGUISTIC VERSIONS
Original: EN

ABOUT THE EDITOR
The Economic Governance and EMU Scrutiny Unit provides in-house and external expertise to support EP committees and other parliamentary bodies in shaping legislation and exercising democratic scrutiny over EU internal policies.

To contact the Economic Governance and EMU Scrutiny Unit or to subscribe to its newsletter please write to:
Economic Governance and EMU Scrutiny Unit
European Parliament
B-1047 Brussels
E-mail: egov@ep.europa.eu

Manuscript completed in November 2023

This document was prepared as part of a series on 'Climate change considerations in monetary policy implementation', available on the internet at:
https://www.europarl.europa.eu/committees/en/econ/econ-policies/monetary-dialogue

CONTENTS

LIST OF ABBREVIATIONS

CSPP	Corporate sector purchase programme
ECB	European Central Bank
ETS	Emissions trading system
EU	European Union
GDP	Gross domestic product
GHG	Greenhouse gas
PSPP	Public sector purchase programme
PEPP	Pandemic emergency purchase programme
TLTRO	Targeted long-term refinancing operations

LIST OF BOX

LIST OF FIGURES

EXECUTIVE SUMMARY

- **In an attempt to reduce the carbon emissions related to Eurosystem corporate securities holdings, the ECB has taken further steps to incorporate climate change considerations into its monetary policy framework, and to support green transition.**
- **The ECB is supposed to support the overall economic policy of the EU, subject of course to its primary goal of monetary policy**. But this does not constitute a valid argument to 'tilt' monetary policy towards green goals (within the monetary policy stance needed to achieve price stability).
- **It is difficult to justify why the ECB should prioritise the green transition over other EU policy goals.**
- **The choice of prioritising the green transition over other goals is a political one that puts the independence of the ECB at risk.**
- **Decarbonising the corporate sector purchase programme (CSPP) will have at best only a marginal influence on actual emissions, as the impact of CSPP purchases on individual bonds is negligible (a few percentage points).**
- **The EU emissions trading system implies a 'waterbed effect', as any attempt by the ECB to favour green sectors, given the overall cap, will only create more room for brown industry to expand.**
- **A small number of high-emitting brown sectors dominate the overall level of emissions. Yet, these are the sectors most in need of capital to finance costly investment to reduce emissions.** Making access to capital more difficult for brown sectors could thus harm mitigation efforts.

1. INTRODUCTION

Whether central banks should 'green' their monetary policy has been debated for some time. The head of the US Federal Reserve has taken the position that the Fed 'is not, and will not be, a climate policymaker'. [1]

The ECB seems to be following a different approach, as stated by Christine Lagarde: 'within our mandate, we are taking further concrete steps to incorporate climate change into our monetary policy operations'.[2] Accordingly, the ECB has announced, as part of its climate agenda, several measures to reduce financial risks associated with climate change and to support green finance. The ECB should of course carefully assess climate risk. As argued by the ESRB (2016), systemic risk can be expected mainly from a sudden change in policy after a too long period of complacency. This does not seem the case today. Climate change is a slow-moving process that is unlikely to generate risk in the sense of sudden changes in financial markets. There is thus a fine line between the necessary objective assessment of the financial risks deriving from climate change and the use of this risk assessment to force firms to change their investments. Moreover, the mandate to defend price and financial stability does not immediately imply a mandate to foster green finance in general. In these respects, the ECB has taken a different stance from that of the US Federal Reserve, whose President Jerome Powell has stated that it will not become a climate change agent.[3]

The argument for why the ECB should take climate change into account when setting its policy is simple. The Treaty states clearly that the overriding aim of monetary policy should be price stability, but that subject to this the ECB should support the economic policy of the Union. The EU has given itself ambitious targets for cutting greenhouse gas (GHG) emissions. It would thus seem that the ECB should support this policy by encouraging emission reductions. However, this argument that the ECB should support green objectives because they are part of the general economic policy of the EU must be qualified.

First of all, price stability is plainly not given as a reason at present. In a literal interpretation, this would seem to preclude any adjustment in the monetary policy stance for green objectives. The counterargument would be that it might be possible for the ECB to tilt its policy within a given monetary policy stance. One prominent example of this line of argument is that the ECB determines the path for the overall amount of corporate bonds to be held by the Eurosystem purely based on the objective of achieving price stability. But it could shift the composition of its holdings towards green industries.

Second, the EU has many other policy objectives, like fostering cohesion at the regional level, increasing the competitiveness of European industry, supporting SMEs or promoting gender equality. The ECB would be making an explicit political choice of prioritising the green transition over other EU policy goals. If supporting SMEs is important, the ECB should provide special financing to them. If regional cohesion is important, it could tilt its asset purchases towards lagging regions. But this is not on the agenda. Making such a political choice which worthy policy goal of the EU to support might endanger the independence of the ECB, which is based on the idea that it only has the task of maintaining price stability (see also Blanchard et al., 2023).

[1] https://greencentralbanking.com/2023/01/12/federal-reserve-jerome-powell-mandate/

[2] https://www.ecb.europa.eu/press/pr/date/2022/html/ecb.pr220704~4f48a72462.en.html

[3] https://www.ecb.europa.eu/press/pr/date/2022/html/ecb.pr220704_annex~cb39c2dcbb.en.pdf

A study by Nakov and Thomas (2023) recognises that there would be no need for the ECB to green its policy if governments imposed a carbon tax. However, the paper argues that if the carbon tax is suboptimal from a global welfare point of view, then a 'green tilting of purchases is optimal and accelerate the green transition'. Still, the optimality here refers to a particular model of the economy and neglects the fact that the 'optimal' carbon tax is a political decision that should be taken at the political level – not by a central bank. On what grounds would the ECB be better placed than the EU's co-legislators, the Council and Parliament, to decide on the appropriate level of carbon taxation and the speed of decarbonisation of the EU? This is the fundamental problem for any action towards greening monetary policy.

The purpose of this contribution is not to go deeper into these general arguments but to illustrate the issues that arise in practice if the ECB wants to pursue green objectives. It uses the case of corporate sector purchase programme (CSPP). The issues that arise in this particular case are of general relevance and will also arise if one considers the use of other instruments, such as the collateral framework, in the pursuit of green objectives.

The issues identified below are also relevant for other central banks that consider greening their monetary policy. But there is one consideration that applies solely to the EU. This stems from the fact that the EU has an emissions trading system (ETS) which puts a cap on total emissions. The existence of this cap has a profound implication. Given this cap, a green monetary policy will fail in its attempt to lower emissions. Any reduction in emissions achieved by the actions of the ECB will only lead to a lower emissions price, but not lower total emissions because these will remain at the level fixed by the ETS.

The remainder of this contribution is organised as follows. Section 2 looks at some issues facing any attempt to green monetary policy in general. Then, Section 3 turns to a more in-depth analysis, using the case of the CSPP. In Section 4, we discuss the concept of 'waterbed effect' in the context of green monetary policy. Section 5 briefly considers the potential for green targeted longer-term refinancing operations (TLTROs). The last section concludes.

2. MONETARY POLICY AND THE GREEN TRANSITION: WHAT LINK?

Against the backdrop of the Treaty, there should be no trade-offs between price stability and the green transition in the environment. Monetary policy should aim at price stability and by doing so provide the financial conditions for sound economic growth. The political authorities should then provide the appropriate regulatory framework to channel resources towards the green transition.

Many green investments are very capital intensive. One could thus argue that any tightening of monetary policy is likely to have an adverse impact on the green transition, for example by increasing the cost of capital for renewables. This is likely to be the case at present. Liebich et al. (2023) raise similar concerns, arguing that a tilting approach could withdraw support from companies that are transitioning to the use of low-carbon technologies.

However, one cannot just look at the monetary policy stance at any given moment. One must consider the average over a longer period and the impact of today's stance on future inflation and interest rates. Delaying a tightening of monetary policy in order to avoid negative effects on the green transition risks delaying price stability and thus requiring higher rates for longer in the future. This is actually what has happened over recent years. With hindsight, it is now apparent that the ECB was late in reacting to the inflationary pressures emerging in late 2021. This forced it to increase rates at a faster pace than might have been necessary if it had started earlier to tighten, possibly increasing the risk premium.

Moreover, the main instrument of monetary policy, the interest rate, is not targeted at just the green part of the economy. Tightening or loosening the policy stance affects the entire economy. It is likely that the impact of a monetary policy stance is stronger for capital-intensive sectors, like renewables. This applies to changes in both directions, tightening or loosening. In the parlance of financial markets, renewables have a high 'beta' with respect to the interest rate.

Renewables constitute only a very small part of the entire EU economy. Green investment in the EU, by the European Commission and the European Investment Bank, reached EUR 285 billion in 2022, representing around 2 % of EU GDP (Pons and Varin, 2023).

The monetary policy stance is thus a very inefficient instrument in relation to the green transition[4]. This is the reason why a central bank wishing to support the green transition will have to consider other instruments that can be targeted at specific sectors or enterprises. The unconventional monetary policy instruments that many central banks have resorted to over the last decade of stubbornly low inflation provide opportunities for doing just that.

For the ECB, this would be mainly the CSPP and the TLTROs. The collateral framework represents another instrument, but it is not considered separately here because the arguments pertaining to the CSPP and the TLTROs also apply, *mutatis mutandis*, to it. Using the collateral framework for green purposes, implies that the ECB is using an instrument meant to reduce its risk to discriminate between different types of enterprises or sectors – i.e. engaging in industrial policy.

[4] A recent study by Nakov and Thomas (2023) recognises this as 'the untargeted, inefficient nature of (conventional) monetary policy as a climate instrument'. https://www.ecb.europa.eu/pub/pdf/scpwps/ecb.wp2845~3b53c0a391.en.pdf?305579a38d3b38136e1338c6de5bbcd0

3. THE CASE OF THE CSPP

The Eurosystem now holds over EUR 300 billion or about 20 % of the outstanding eligible universe of corporate bonds, similar to the share of public sector bonds held under the public sector purchase programme (PSPP) and pandemic emergency purchase programme (PEPP). [5]

It is possible that the impact of the CSPP on the average yields of corporate bonds has been substantial. However, the few available studies suggest that it appears to have been limited. Bremus et al. (2021) find no effect of the CSPP announcement on yields. The ECB's own research credits the announcement effect of the CSPP with a reduction in corporate bond spreads for eligible securities of 25 basis points (De Santis et al., 2018).

Given that the average maturity of corporate bonds is only half that of the government bonds bought under the PSPP and PEPP (around 3 years for corporate bonds vs 7-8 years for government bonds) and given that the market for corporate bonds is much less liquid, one would expect less of an announcement effect from the CSPP, but maybe a stronger medium-term effect on spreads and issuance volumes. Although stimulating the issuance of corporate bonds might be a side effect of the CSPP, this is not an objective of monetary policy.

Studies focusing on the subsequent evolution of the market show somewhat mixed results for yields, but strong trend growth in overall issuance (Zaghini, 2019). Still, in the context of greening the CSPP the issue is slightly different. The ECB can expect a shift in holdings towards greener sectors or firms to have an impact only if this shift affects the yields of bonds whose holdings go up, leaving the average potentially unchanged.

Analyses of the impact of Eurosystem purchases on the yields of individual securities have mostly found very limited effects (around 1 percentage point) (Eser et al. 2023). This should not be surprising. It should be easier for investors to shift across individual company names within the class of corporate bonds than to adjust their holdings of the overall asset class. This is a first indication that tilting the CSPP portfolio might have only a limited effect. This effect will be further reduced because the ECB decided to stop the reinvestment of the CSPP as of July 2023.[6] In view of the rather short maturity of the CSPP portfolio, this implies that the holdings of the Eurosystem will decline quickly – twice as fast as those of the PSPP. Figure 1 below provides a rough illustration of the path of Eurosystem CSPP holdings based on observed redemptions over recent years.

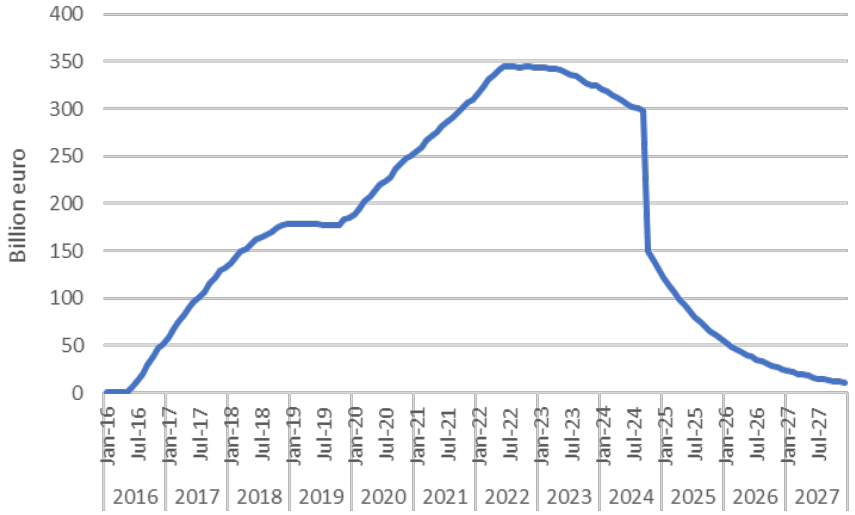
Eurosystem holdings of corporate bonds will thus become of marginal relevance within a couple of years. The only meaningful action that could be undertaken at this point would be to reshuffle the portfolio from brown to green industries/enterprises.

[5] ECB Economic Bulletin, Issue 5/2023.

https://www.ecb.europa.eu/pub/economic-bulletin/focus/2023/html/ecb.ebbox202305_06~3f689a7ab9.en.html

[6] https://www.ecb.europa.eu/mopo/implement/app/html/index.en.html#:~:text=Between%20July%202022%20and%20February%202023%20the%20Eurosystem%20aimed%20to,reinvestments%20as%20of%20July%202023.

Figure 1: Simulation of CSPP holdings path



Source: Authors' elaboration based on data from the ECB.

Notes: Simulations include redemptions. For the period October 2023-October 2024, we use the redemption estimates from the ECB. For the period afterwards, we assume an annual redemption rate of 5%, based on the historical average, under the assumption of a similar structure as for holdings (in terms of weighted average maturity and distribution over maturities).

3.1 Emission intensity of the CSPP portfolio

The basic rule for CSPP purchases was that they should be market neutral. The CSPP holdings therefore reflect the distribution of bond issued across different economic sectors. Those sectors that one would consider *ex ante* as being the most emission intensive – like utilities, chemicals and construction – together account for less than a quarter of the total (of now somewhat above EUR 300 billion).[7] These shares have not changed noticeably since the start of the CSPP programme in 2017 because the market shares of the different sectors in the overall corporate bonds outstanding have not changed.

But the shares of different sectors in the CSPP portfolio say little about how brown or green it is because in reality there are great differences between sectors in terms of their carbon intensity. The measure of carbon intensity most often used in green finance is the ratio of emissions to revenues.[8] This ratio ranges from a high of over 1000 (tonnes of CO_2 per million euro in revenues) for construction (cement is cheap, but its production is very emission-intensive) and around 700 t/million euro for utilities (power generation) and chemicals to lows of less than 10 t/million euro for telecommunication and technology products. The range of emission intensity across sectors is thus around 100 to 1.

One first algebraic consequence of these huge differences is that percentage changes and absolute changes have very different meanings. A 10% reduction in the emission intensity of construction would mean 100 tonnes of CO_2 less (at unchanged revenues). A 50 % reduction in the emission intensity of telecommunications would mean only 5 tonnes less (again, at unchanged revenues).

Another implication for the CSPP is that a few high-emitting sectors dominate the total emissions embodied in the CSPP holdings of the Eurosystem even if their share in the portfolio is limited. If one multiplies the shares in the CSPP portfolio by the respective emission intensities one finds that the three

[7] https://www.ecb.europa.eu/mopo/implement/app/html/index.en.html#cspp

[8] From an economic point of view, it would be preferable to use the ratio of emissions to value added instead of revenues. A firm that has a high rate of revenues to value added, for example in retail or wholesale services, would have a low ratio of emissions to revenues, but the emissions per value added would much be higher.

most emission-intensive sectors – utilities, chemicals and construction – together account for over 70 % of the CSPP holdings[9].

These three sectors all fall under the ETS[10] (utilities represent the ETS power-generation sector and construction comprises the cement plants that are also covered by the ETS, as are the large emitters in the chemical industry). The fact that these three sectors are already covered by the ETS means that their total emissions are already limited (capped). This suggests that providing green enterprises with easier financing conditions might have no effect on the aggregate amount of emissions. Section 4 analyses this 'waterbed' more in detail.

The 'waterbed effect' pertains to a situation where any government's intervention that reduces emissions in one particular part of a sector that is covered by the ETS will have no impact on total ETS emissions, as the total emissions cap remains unchanged.[11]Tilting the portfolio towards less carbon-intensive sectors, for example transport or services, are not subject to this 'waterbed effect'[12] because there is no price mechanism to limit emissions in these sectors.

The ECB does not use raw emission intensities. It is instead exploring a rather complex scoring system as a benchmark for tilting the Eurosystem's corporate bond purchases towards issuers with a better climate performance. Box 1 provides a simple illustration of the framework planned by the ECB for evaluating the climate performance of corporate bond issuers. On the ECB's scoring system, the average score is close to 4 out of 5 (the higher the score the better the climate performance), which is not surprising given that most quoted companies have reduced their emissions. [13]

The approach of the ECB to classify (then potentially decarbonise) the CSPP faces several challenges. For example, Liebich et al. (2023) highlight the data gaps in measuring sector-level and issuer-level carbon emission that are mostly backward-looking and sensitive to simplifying assumptions. As illustrated in the Box 1, forward-looking emission targets are one of the main aspects of issuers' climate score assessment underlying the ECB tilting approach. However, there is no systematic database on firms' future decarbonisation plans. Therefore, the ECB mostly relies on firms' self-reported emission reduction targets, 'disclosure'. Blanchard et al. (2023) argue that it is anyway difficult to ensure the better financing for green purposes result in additional emissions reductions. Liebich et al. (2023) argue that it is likely that high bureaucratic costs for disclosure disproportionately favour larger companies,

[9] The underlying hypothesis here is that the ratio of outstanding bonds to revenues is approximately the same across sectors and firms. Papoutsi et al. (2022) arrive at a similar result using a similar assumption, but they had also access to the detailed securities holdings of the ECB.

[10] The EU Emissions Trading System (EU ETS) is a carbon market that operates on a 'cap-and-trade' system of emission allowances. It aims to reduce GHG emissions by providing a financial incentive for regulated entities to reduce their pollution. Under the EU ETS, regulated entities, such as power plants and factories, are required to hold a permit for each tonne of CO_2 they emit. These permits, known as emissions allowances, can be freely traded. The more a power plant reduces its emissions, the fewer allowances it needs to buy. The key aspect of the ETS of interest in this context is the cap on total emissions. See https://climate.ec.europa.eu/eu-action/eu-emissions-trading-system-eu-ets_en

[11] There is the further complication in that the ETS covers the entire EU, but the ECB can only influence firms that issue bonds in euro. It is thus unlikely to have much impact on the financing conditions of firms outside the euro area. The free allowances available to industries exposed to carbon leakage constitute another complication not considered here.

[12] There is a large body of literature on the waterbed effect – see Perino et al. (2022) and Willner and Perino (2022). Perino finds that 'supply-side' policies that unilaterally raise the carbon price or directly limit emissions-intensive production have positive internal leakage – sometimes in excess of 100 % – as they raise emissions demand in other jurisdictions that 'fill the gap' due to lower domestic production. Reducing the access of brown firms to finance represents such a supply-side policy. The Market Stability Reserve that was recently adjusted might mitigate the waterbed effect, but it is meant to deal with situations of excess allowances, which should not arise in the first place.

[13] Climate-related financial disclosures of the Eurosystem's corporate sector holdings for monetary policy purposes, March 2023 See https://www.ecb.europa.eu/pub/pdf/other/ecb.climate_related_financial_disclosures_eurosystem_corporate_sector_holdings_monetary_policy_purposes2023~9eae8df8d9.en.pdf

and, in turn, their corresponding scores. All this suggests that it would be difficult to use this classification to make operational decisions which bonds to buy.

Moreover, the shift towards a greener CSPP portfolio would have a fiscal cost, albeit most probably a very small one, at least relative to the total interest income of the Eurosystem. But this small loss of revenue might still acquire some importance given that most of the national central banks in the euro area are likely to make losses over the next few years (Gros and Shamsfakhr, 2022).

The purpose of greening the CSPP portfolio is to reduce the financing cost of greener sectors relative to their browner counterparts (at the same level of rating or risk). To the extent that this goal is achieved, the average interest rate on a green CSPP portfolio would decline (relative to the average market interest rate). This implies that greening the CSPP would lower the interest income of the Eurosystem.

As argued above, the impact of higher CSPP holdings on the yields of individual corporate bonds is very small, certainly less than 10 basis points[14] As such, the magnitude of the yield differential that greening the CSPP could achieve would be very limited. A yield differential on half the CSPP of below 10 basis points would lead to a loss of interest income of less than EUR 300 million per annum.

[14] See also Nakov and Thomas (2023), who recognise that any impact 'on CO_2 emissions and global temperatures is limited by the small size of eligible bonds' spreads'.

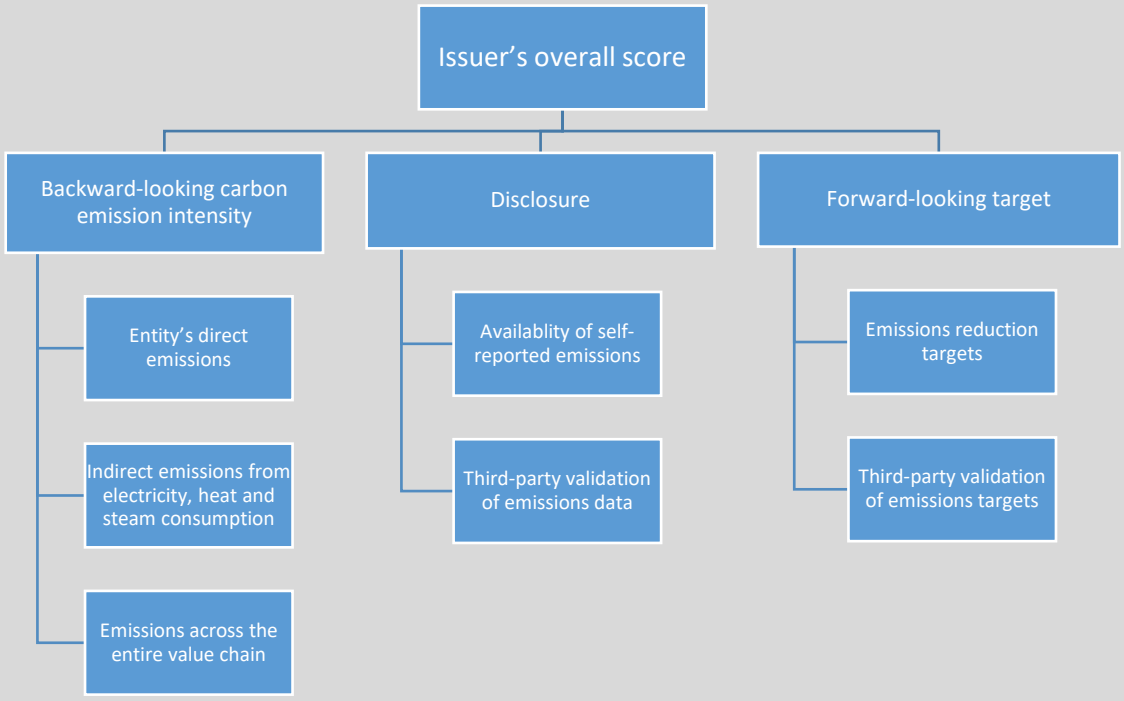
Box 1: Corporate issuers' scoring framework

According to the ECB, an issuer's overall score is a combination of three main dimensions: the backward-looking carbon emission intensity; the disclosure or the quality of the emissions data provided by issuers; and the forward-looking target reflecting the issuer's expected changes in future emissions. The sub-scores of the three aspects are aggregated, using certain weights, into issuer-specific climate scores. These in turn determine the tilting, such that future ECB corporate bond purchases and/or reinvestments are geared towards issuers with a better climate performance.

Backward-looking carbon emission intensity. This dimension reflects the past GHG emissions of an issuer. It encompasses an entity's direct emissions from output (scope 1), indirect emissions from input (scope 2) and emissions across the entire value chain (scope 3).

Disclosure. If issuers do not have self-reported emissions data, they are assigned a lower (backward-looking) emissions sub-score. The highest scores are assigned to issuers that have their climate-related financial disclosures verified by a third party. The lowest sub-scores are assigned to issuers that have no self-reported emissions data, and only estimates of their emissions from third-party data providers.

Forward-looking emissions target. A higher score is assigned to issuers that are on an ambitious decarbonisation path towards Paris Agreement targets, particularly if the target is science-based and has been validated by a third party. If issuers have no self-reported emissions data and emission reduction targets cannot be verified, they are assigned the lowest sub-score.



Source: Based on ECB (2023).

4. GREEN MONETARY POLICY UNDER THE ETS CAP: BEWARE OF THE WATERBED EFFECT

Separate from the question of the impact of CSPP purchases on the yield of individual corporate bonds, one needs to consider the impact of any reduction in the yields of 'greener' bonds on emissions. This is where a major conceptual problem arises as mentioned above.

Emission-intensive sectors like industry or power generation are covered by the ETS. This implies that the total allowable emissions of industry (and the power sector) are limited by binding ceilings, not only for today, but also for the next decade (and beyond).

This has a simple implication. If the Eurosystem tilts its corporate bond investments away from industry, capital will become marginally more expensive for industry. Yet, all this may do is reduce investment in industry somewhat. It does not imply that emissions in industry will fall below the ETS limit because the ex-ante lower investment in industry would also lead to a lower ETS price, which would then reduce efforts by firms to keep emissions down.[15]

The same argument applies to the idea that rebalancing the CSPP portfolio could just aim to provide finance to an individual firm within an industry or the power sector. The easier access to finance for some green industrial firms (i.e. those with lower emissions) and any market share they might gain relative to their browner competitors would just make room under the ETS ceiling for other firms to increase their production or to reduce their mitigation efforts.

To take an extreme example, providing a wind farm with (marginally) easier access to finance via a rebalancing of the CSPP portfolio might look like fostering green investment. The additional wind farm constructed through this policy would nonetheless reduce the emissions price, because there would subsequently be lower emissions at a given amount of electricity generated. The lower emissions price would in turn reduce the pressure on fossil fuel power stations to reduce emissions, leading either to a switch back to coal, or simply to older, amortised power plants with higher emission rates.

The end result of greening the ECB's portfolio might be a marginal reduction of the price of ETS allowances, but it will not change the overall emissions of the sectors covered by the ETS because that ceiling has been fixed. (The situation would be different if the EU had a fixed price for emissions. In that case, a greener ECB portfolio would make financing for low-emitting industries easier, leading to lower emissions at a given price for carbon.)

Greening the ECB's corporate bond portfolio in sectors not covered by the ETS, e.g. by switching bond holdings from brown service sector firms to greener ones, might have an impact on the total emissions of these sectors as they are not subject to a quantitative ceiling. However, the EU's legislators have clearly chosen not to limit the emissions of these sectors. The ECB would not be supporting EU policy but would actually be going against EU policy if it decided to provide some firms from these non-ETS sectors with easier financing conditions because they are less carbon intensive.

The makers of some green goods whose production is energy intensive, such as the production of batteries and wind turbines, represent a special case. To the extent that the production of these goods is emission intensive they should not be part of a green portfolio. Yet, these goods might deliver emissions reductions over their lifetime that far outweigh the emissions associated with their production.

[15] The waterbed effect is rarely considered in the literature on green monetary policy. Papoutsi et al. (2022) consider only carbon taxes although they describe specifically the case of the ECB's CSPP portfolio.

5. GREEN TLTRO?

One could imagine that the ECB provides a different target for its Targeted Longer Term Refinancing Operations (TLTROs). The purpose of the previous and existing TLTROs had been to foster overall investment by promising lower interest rate costs to banks that would increase their lending above a certain threshold.[16] With inflation rates considerably above 2% these targets were easy to reach because they had been set in nominal terms. The price level is now about 10% higher than it was when the last TLTROs were concluded. Even banks that reduced their lending in real terms could report an increase in the nominal amount of their loans. Under the TLTRO II some banks could qualify for the low (then negative) deposit rate if they kept their loan portfolio constant in nominal terms. Gros et al. (2016) describe how the rules for the TLTROs could result in this 'cash for loans'.

One could think about a new, green, TLTROs that would link lower refinancing costs to targets in terms of green lending. For example, the ECB could provide funds for less than the normal refinancing rate, e.g. at the deposit rate, for firms that increase green (or reduce brown) lending by a certain percentage. Given that the difference between deposit and refinancing rate is now 50 basis points (and has usually been of this size) this would provide a considerable incentive for green lending, more than any tilting of the CSPP that has resulted in only very small reductions in financing costs as argued above.

It would be difficult to justify the use of such GTLTRO as a monetary policy instrument at present. The ECB is currently engaged in an effort to combat inflation, which includes a gradual reduction of its balance sheet via quantitative tightening and the ECB has also undertaken measures to accelerate the repayment of outstanding TLTROs. Price stability considerations would preclude the use of such an instrument at present (given current inflation rates). But if inflation falls below 2% and remains there despite interest rates reaching again the lower bound, the ECB might again be justified to engage in TLTROs.

The practical difficulties facing such a green TLTRO (GTLTRO) would at any rate be immense.[17] The key practical issues would be similar to the ones for a green tilting of the CSPP. First of all, how would the ECB define desirable 'green' lending? The aim of any GTLTRO would be to contribute to a reduction in emissions. But this then leads to question how to measure the required emission reduction. It could be in percentage or in absolute terms (but calibrated relative to the overall amount of the emissions of the enterprise in the second case). As argued above, the first alternative would favour low carbon intensity and provides little incentive to decarbonise brown sectors. The second alternative would run into the additionality problem, i.e. whether the decarbonisation results would not have been achieved even in the absence of the GTLTRO.

As mentioned above, a small number of industries produce the bulk of emissions. To have an impact, the GTLTRO would thus necessarily have to go mainly to brown industries. This might be difficult to communicate and emission reductions difficult to monitor.

[16] https://www.ecb.europa.eu/ecb/educational/explainers/tell-me/html/tltro.en.html

[17] For a cautious conclusion see also Scouteris and Anastopoulou (2022).

6. CONCLUSION

The broad conclusion of this analysis is that greening the CSPP represents much ado about very little. The impact of the greening on actual emissions is likely to be extremely small, if any.

It is understandable that the ECB feels under pressure from the public and some NGOs to appear green. But the environmental benefits of caving in to this political pressure are likely to be negligible relative to the dangers to its independence. Moreover, providing cheaper access to finance for green enterprises or sectors represents a use of public resources that has little to do with monetary policy. These considerations also apply to the idea of green TLTROs.

Two more general considerations emerge from the analysis.

First, there are very large disparities in the emission intensities of different sectors. A small number of high-emitting sectors dominate emissions as a whole. These brown sectors are those that are most in need to capital to finance costly investment to reduce emissions. Making access to capital more difficult for brown sectors could thus harm mitigation efforts.

The key problem is that a central bank is not well placed to judge whether the financing of a brown enterprise (a corporate bond issue or a bank loan) would enable the continuation of high-emission activities or investment in emission reductions. Given the fungibility of money, this would require a detailed analysis of the overall financing structure and investment planning of the enterprise in question.

Second, one needs to consider that the existence of the cap on emissions fixed by the ETS creates a waterbed effect. Giving monetary policy a green tilt might spur some companies to reduce their emissions. But total emissions would remain at the same level as before, because a lower price on emissions would then lessen the incentives for other firms to reduce theirs.

REFERENCES

- Bremus, F., Schütze, F. and Zaklan, A. (2021). 'The Impact of ECB Corporate Sector Purchases on European Green Bonds'. DIW Discussion Papers, No. 1938. https://www.diw.de/documents/publikationen/73/diw_01.c.813500.de/dp1938.pdf
- De Santis, R. A., Geis, A., Juskaite, A. and Cruz, L.V. (2018). 'The impact of the corporate sector purchase programme on corporate bond markets and the financing of euro area non-financial corporations'. *ECB Economic Bulletin*, Issue 3/2018. https://www.ecb.europa.eu/pub/pdf/other/ecb.ebart201803_02.en.pdf
- ECB (2023). *Climate-related financial disclosures of the Eurosystem's corporate sector holdings for monetary policy purposes*. https://www.ecb.europa.eu/pub/pdf/other/ecb.climate_related_financial_disclosures_eurosystem_corporate_sector_holdings_monetary_policy_purposes2023~9eae8df8d9.en.pdf

  Eser, F., Lemke, W., Nyholm, K., Radde, S. and Vladua, A. L. (2023). 'Tracing the Impact of the ECB's Asset Purchase Program on the Yield Curve'. International Journal of Central Banking, Vol. 19, No 3, pp. 352-422. https://www.ijcb.org/journal/ijcb23q3a9.pdf
- ESRB (2016). 'Too late, too sudden: Transition to a low-carbon economy and systemic risk' https://www.esrb.europa.eu/pub/pdf/asc/Reports_ASC_6_1602.pdf
- Blanchard, O., Gollier, C., & Tirole, J. (2023). The portfolio of economic policies needed to fight climate change. Annual Review of Economics, 15(1), 689-722. https://www.annualreviews.org/doi/abs/10.1146/annurev-economics-051520-015113
- Gros, D., Valiante, D. and De Groen, W. (2016). 'The ECB's Latest Gimmick: Cash for Loans'. CEPS Policy Brief 341. https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2766217
- Gros, D. and Shamsfakhr, F. (2022). 'The real fiscal cost of central bank bond buying'. Centre for European Policy Studies (CEPS).https://www.ceps.eu/ceps-publications/the-real-fiscal-cost-of-central-bank-bond-buying/
- Liebich, L., Nöh, L., Rutkowski, F. and Schwarz, M. (2023). ''Unconventionally Green: Monetary Policy between Engagement and Conflicting Goals''. *Review of Economics*, Vol. 74, No. 1, pp. 53-77. https://doi.org/10.1515/roe-2023-0024
- Nakov, A. and Thomas, C. (2023). *Climate-conscious monetary policy*. ECB Working Paper Series No 2845.https://www.ecb.europa.eu/pub/pdf/scpwps/ecb.wp2845~3b53c0a391.en.pdf?305579a38d3b38136e1338c6de5bbcd0
- Papoutsi, M., Piazzesi, M. and Schneider, M.(2022). 'How unconventional is green monetary policy'. Stanford University.https://web.stanford.edu/~piazzesi/How_unconventional_is_green_monetary_policy.pdf
- Perino, G., Ritz, R. A. and van Benthem A. A. (2022). *Overlapping climate policies*. National Bureau of Economic Research Working Paper No w25643. https://www.nber.org/papers/w25643
- Pons, J. F. and Varin, G. (2023). *Green investment in the European Union: Situation, additional needs and funding*. Eurofi. https://www.eurofi.net/wp-content/uploads/2023/06/eurofi_green-investment-in-the-european-union-situation-additional-needs-and-funding_stockholm_april-2023.pdf

- Scouteris, B., and Anastopoulou, E. (2022). 'Green Bonds and the ECB: A Tale of (Measured) Promise and (Required) Caution'. http://dx.doi.org/10.2139/ssrn.4118275
- Willner, M. and Perino, G. (2022). 'Beyond control: Policy incoherence of the EU emissions trading system'. *Politics and Governance*, Vol. 10, No 1, pp. 256-264. https://www.cogitatiopress.com/politicsandgovernance/article/view/4797
- Zaghini, A. (2019). *The CSPP at work – Yield heterogeneity and the portfolio rebalancing channel*. ECB Working Paper Series No 2264. https://www.ecb.europa.eu/pub/pdf/scpwps/ecb.wp2264~c4382400c5.en.pdf

Any greening of monetary policy is likely to have at best a marginal effect on emissions given the very small spreads on the yields of green bonds and the cap on emissions inherent in the EU's emissions trading system.

Trying to limit the supply of capital to brown industries could backfire as these industries are those most in need of financing for capital-intensive decarbonisation.

These arguments apply both to the tilting of investments under the corporate sector purchase programme (CSPP) towards green industries/enterprises and to the potential greening of targeted long-term refinancing operations. Moreover, CSPP holdings will decline rapidly, so this prospective policy instrument will become irrelevant in a few years.

This document was provided by the Economic Governance and EMU Scrutiny Unit at the request of the Committee on Economic and Monetary Affairs (ECON) ahead of the Monetary Dialogue with the ECB President on 27 November 2023.

PE 755.709
IP/A/ IP/A/ECONMD/FWC/2020-002/C7/SC14

Print ISBN 978-92-848-1255-4 | doi:10.2861/ 421870 | QA- 03-23-450-EN-C
PDF ISBN 978-92-848-1254-7 | doi:10.2861/ 754851 | QA- 03-23-450-EN-N