Green monetary policy – What does that mean more concretely?

The ECB wants to do its bit to combat climate change. But what can it do in concrete terms? Based on contributions from (euro) central banks, international organisations and academics, we show which instruments are actually available to the ECB. On the one hand, we show that the lack of data clearly limits the practical feasibility of many possible measures. On the other hand, it becomes clear that the measures that are complex to implement are also those that (from the ECB’s point of view) are both quite compatible with monetary policy and effective in the fight against climate change.

Not a week goes by without ECB representatives expressing the bank’s willingness to contribute to the fight against climate change. Unfortunately, the proposals are usually not very concrete. This may be due to the fact that the policy discussion in the Council is still underway: when the ECB will announce the results of the review of its monetary policy strategy in the second half of the year, it also wants to explain what the central bank can contribute to the fight against climate change.

Until recently, we rarely found concrete proposals to combat climate change (cf. Schoenmaker and BIS). The fog has at least lifted somewhat since the Network for Greening the Financial System (NGFS) presented its report “Adapting central bank operations to a hotter world” a few weeks ago. Based on this and several other reports, we want to give an overview of the ECB’s options in combating climate change.

Without data it does not work

The fight against climate change is complicated by the fact that detailed data showing how exposed companies and financial institutions are to climate risks is still not sufficiently available. Rating agencies do publish supplementary eco-ratings and special environmental commentaries. But they have not yet developed a comprehensive rating methodology that appropriately addresses climate change-related financial risks while meeting evolving regulatory standards.

The NGFS also draws attention to this problem in its recently published report:

“At the current juncture, in the absence of reliable and commonly agreed ways of putting a price tag on climate-related risks, central banks wishing to act may have no choice but to consider using non-financial climate-related metrics as a pragmatic starting point.

... The limited availability and accuracy of relevant data is currently constraining virtually all climate-related risk metrics.”

The ECB had already pointed out the unreliability of the data in its Financial Stability Review published in November 2019. Environmental ratings have been developed that attempt to consolidate quantitative and qualitative information on environmental aspects in a single indicator ("score"). For example, the Bloomberg and Refinitiv environmental scores take values between 0 and 100, with a higher score indicating better performance on environmental variables by the total of 72 EU banks and insurers surveyed. The ratings have a very low correlation, which, according to the ECB, reflects the lack of detailed data or the wide discretion in the construction of such indicators (chart 1).
In order to alleviate the apparent lack of data related to the fight against climate change, ECB representatives had repeatedly proposed that the ECB should only purchase or accept as collateral in monetary policy operations those securities whose issuers fulfil certain climate-related reporting requirements. Similarly, the central bank could only pay attention to ratings from rating agencies that take adequate account of climate-related financial risks. In this way, the ECB would help to promote market transparency and standards with regard to rating agencies and banks and eliminate information deficits.

**CO₂ emission data as a (reasonably) practicable interim solution**

As long as the data problems are not solved, all the publications we know of suggest using data on CO₂ emissions as an interim solution on which to build measures to combat climate change. At least for many companies such data is available. According to ECB Council member Villeroy, the ECB can calculate such CO₂ climate indicators for more than 90% of the value of corporate bonds eligible as collateral at the ECB. We present a concrete proposal on how an environmental rating system could be created based on this below.

However, the available CO₂ data do not solve all problems:

- When assessing covered bonds and other securitisation products accepted by the ECB as collateral or held in monetary policy portfolios, the ECB would face difficulties in that detailed data on the carbon footprint of bank loans used as collateral for these operations are generally not available or are limited, the NGFS stressed.

- Similarly, the CO₂ emissions of collateral consisting of credit claims on small and medium-sized enterprises are not currently disclosed, according to the NGFS.

**BIS: An environmental rating system at company level**

Authors of the Bank for International Settlements (BIS) have proposed an environmental rating system at company level in a study. The starting point of their considerations is the following: currently, when a bond is defined as "green", this does not necessarily signal that issuers have a lower or decreasing carbon intensity (measured as CO₂ emissions relative to sales). Since the label "green" refers to individual projects and not to the company's overall activities, projects that promise to reduce carbon emissions may be offset by increased carbon emissions from the same company elsewhere. Empirically, according to BIS, there is no clear evidence that green bond issuance is associated with a reduction in carbon intensity at the company level, so rating companies – rather than bonds – on their carbon emissions could provide a useful signal to investors and encourage companies to increase their carbon efficiency. In particular, such ratings can be designed to provide additional incentives for large carbon emitters to help combat climate change, the study's authors argue.
Specifically, the BIS authors propose a ten-level rating grid that takes into account that a very small fraction of companies are responsible for a large share of CO₂ emissions. The ratings start with GGGGG, which includes the "greenest" companies, i.e. those with the lowest carbon intensity, and end with PPPPPP for the companies that have the highest carbon intensity ("G" for "green", "P" for "pollute").

Table 1 shows the relevant thresholds based on the carbon intensity of companies in 2018 (the latest available data for most companies). Since the exact thresholds for carbon intensity are "arbitrary" according to the authors, they also provide rounded figures for simplicity (last row of table 1).¹

<table>
<thead>
<tr>
<th>Percentile of carbon intensity distribution</th>
<th>5th</th>
<th>25th</th>
<th>50th</th>
<th>75th</th>
<th>85th</th>
<th>90th</th>
<th>95th</th>
<th>97.5th</th>
<th>99th</th>
<th>&gt;99th</th>
</tr>
</thead>
<tbody>
<tr>
<td>Threshold Scopes 1–3 carbon intensity²</td>
<td>50</td>
<td>133</td>
<td>401</td>
<td>985</td>
<td>1,847</td>
<td>3,112</td>
<td>6,293</td>
<td>9,128</td>
<td>16,812</td>
<td>&gt;16,812</td>
</tr>
<tr>
<td>Rounded threshold Scopes 1–3 carbon intensity²</td>
<td>50</td>
<td>130</td>
<td>400</td>
<td>1,000</td>
<td>1,800</td>
<td>3,100</td>
<td>6,300</td>
<td>9,100</td>
<td>17,000</td>
<td>&gt;17,000</td>
</tr>
</tbody>
</table>

¹ In tonnes of CO₂ per USD million of revenue. Includes both upstream and downstream Scope 3 data.

The authors of the BIS study emphasise that the extreme skewness of the distribution of carbon intensities across companies underlines that it is crucial for any rating system aligned with climate goals to provide strong incentives for companies with high carbon emissions to reduce their emissions activity: even though the PPPPPP rating bracket contains only 1% of the companies with the highest carbon intensities, they are responsible for almost 40% of total emissions in 2018 in the sample of 16,000 companies (chart 2).

The background to his considerations is the following: in its monetary policy, the ECB – like any other central bank – pursues a market-neutral approach in order to avoid market distortions.

"Tilting" for the ECB

So how can such an environmental rating system be used in the ECB's efforts to make its monetary policy greener? In a study, Professor Dirk Schoenmaker² proposed a so-called "tilting approach" for the ECB, i.e. a moderate reallocation of the central bank's bond purchases, for example by buying relatively more securities from companies with low carbon intensity and correspondingly fewer securities issued by companies with high carbon intensity. With this approach, the BIS environmental rating could be used in principle although Schoenmaker’s model calculations are derived from a different data basis. He concludes in his study that a medium tilting approach would reduce carbon emissions in the ECB's corporate bond portfolio by more than half.

The background to his considerations is the following: in its monetary policy, the ECB – like any other central bank – pursues a market-neutral approach in order to avoid market distortions.
This means that it buys as much in each sector proportionately to its share in the market portfolio (chart 3). This market-neutral approach means that the corporate bond portfolio is comparatively carbon-intensive, as carbon-intensive companies – such as fossil fuel companies, utilities, car manufacturers and airlines – are typically capital-intensive. The ECB's corporate bond market portfolios are therefore overweight in carbon-intensive securities.

Chart 3: ECB corporate bond purchases in line with market portfolio
Economic sector distribution of CSPP holdings at end of Q1-21 and the eligible bond universe

According to Schoenmaker, in order to avoid disruptions in the transmission of its monetary policy to the economy, the ECB should remain active in the entire market, i.e. not completely exclude the bonds of certain carbon-intensive issuers from purchases, but only make moderate shifts in purchases depending on the carbon intensity of the issuers. An environmental rating could be a comprehensible guideline for the extent of the shifts and at the same time create incentives for companies to make efforts to move up to the next better rating level. It would also be possible to reallocate only within each individual sector, depending on the environmental rating, so as not to penalise carbon-intensive sectors per se, and at the same time not to deprive companies from the outset of the courage to invest in more environmentally friendly alternatives within their means.

However, one should not expect too much from such a tilting approach: as can be seen from chart 2, the bonds of companies with a good environmental rating (G to GGGG) only have a share of less than 10%, so there are natural limits to the reallocations if the ECB wants to maintain the overall volume of purchases it considers necessary from a monetary policy perspective. In practice, it is more likely to shift from bonds issued by very high carbon intensity companies to bonds issued by high carbon intensity companies.

In principle, the ECB also runs the risk of conflicting objectives in the long term. For preferring certain securities when buying corporate bonds can of course only be implemented as long as the ECB buys bonds at all (or at least reinvests the amounts of maturing bonds). But what happens if, from a monetary policy point of view, a reduction in purchases or in the bond holdings is indicated? Then there would certainly be calls to continue "green" bond purchases, as the fight against climate change should not only be waged in periods of weak price pressure.

Adjust haircuts or collateral pool with environmental rating cap
Schoenmaker proposes to increase the haircut that the ECB applies to the value of a bond when accepting it as collateral for its open market operations if the issuer has a particularly high carbon intensity. Here, too, the central bank could base the extent of the additional haircuts on an environmental rating.

An alternative would be for the ECB to make a commercial bank's collateral pool more environmentally friendly by simply setting an upper limit for the environmental rating that each commercial bank must then meet on average for its pool.

What do ECB officials say?
When the ECB announces the results of its strategic review in the second half of the year, it will also comment on what measures it can take in the fight against climate change. Perhaps
because a decision in principle has yet to be taken, there are so far very few statements on what
the measures might look like in concrete terms:

- ECB Executive Board members Schnabel and Elderson argued similarly to Dirk Schoenmaker
  in a podcast published a few days ago: The market portfolio orientation of the ECB's corporate
  bond purchases would lead to an inappropriately high carbon intensity, which the central bank
  should correct. According to Schnabel, however, the ECB should neither focus on purchases
  of predominantly "green" bonds (because their issuance volume is too low) nor refrain from
  buying bonds of carbon-intensive companies, because such "penalisation" would set the
  wrong incentives. So apparently both ECB Executive Board members prefer a tilting approach
  regarding the bank's corporate bond purchases.

- The French central bank president, Villeroy, has explicitly spoken out in favour of tilting:
  He proposes measuring the efforts an issuer makes over a certain period of time to reduce
  its carbon emissions compared to its peers in the same economic sector. This is where the
  most data are available, he says. This sector-specific assessment would prevent all issuers
  in carbon-intensive sectors from being "blindly punished".

- On the other hand, a major role in combating climate change could go beyond the ECB's
  mandate and competence, said Pierre Wunsch, the Belgian central bank president. While it
  could be argued that markets do not price climate risk correctly, Wunsch expressed doubts
  about the validity of this argument. "I am never comfortable with the idea that we can
  systematically beat the market," Wunsch said. He said that while available risk assessments
  may be flawed and in need of improvement, there was no evidence of a systemic, persistent
  bias. Trying to influence market pricing could lead to bubbles, he added.

NGFS report provides general but systematic overview

In addition to the statements of ECB Council members, the NGFS report published a few weeks
ago probably also provides valuable clues as to which measures the ECB is considering in
the fight against climate change. To begin with, it provides a still rather general but systematic
overview of the central bank's options with regard to a green monetary policy. Secondly, it
presumably provides a good insight into the ECB's analyses on the topic, because of the 53
contributors to the report, 70% are from the ECB or the euro central banks.

The NGFS report first lists options for central banks in the fight against climate change (Table
2). These are, first of all, the ones mentioned above, as well as some additional ones related
to open market operations of central banks. However, ECB representatives have so far never
considered these options – presumably also because (according to the NGFS) they would in
part significantly limit the effectiveness of monetary policy.
Table 2: Options for central banks in the fight against climate change

<table>
<thead>
<tr>
<th>Credit operations¹</th>
<th>Collateral²</th>
</tr>
</thead>
<tbody>
<tr>
<td>(1) Adjust pricing to reflect counterparties’ climate-related lending</td>
<td>Make the interest rate for central bank lending facilities conditional on the extent to which a counterparty’s lending is contributing to climate change mitigation and, to the extent to which they are decarbonising their business model.</td>
</tr>
<tr>
<td>(2) Adjust pricing to reflect the composition of pledged collateral</td>
<td>Charge a lower (or higher) interest rate to counterparties that pledge a higher (or lower) proportion of low-carbon (or carbon-intensive) assets as collateral or set up a credit facility (potentially at concessional rates) accessible only against low-carbon assets.</td>
</tr>
<tr>
<td>(3) Adjust counterparties’ eligibility</td>
<td>Make access to (some) lending facilities conditional on a counterparty’s disclosure of climate-related information or on its carbon-intensive/low-carbon/green investments.</td>
</tr>
</tbody>
</table>

| (4) Adjust haircuts² | Adjust haircuts to better account for climate-related risks. Haircuts could also be calibrated such that they go beyond what might be required from a purely risk mitigation perspective in order to incentivise the market for sustainable assets. |
| (5) Negative screening | Exclude otherwise eligible collateral assets, based on their issuer-level climate-related risk profile for debt securities or on the analysis of the carbon performance of underlying assets for pledged pools of loans or securitised products. This could be done in different ways, including adjusting eligibility requirements, tightening risk tolerance, introducing tighter or specific mobilisation rules, etc. |
| (6) Positive screening | Accept sustainable collateral so as to incentivise banks to lend or capital markets to fund projects and assets that support environmentally-friendly activities (e.g. green bonds or sustainability-linked assets). This could be done in different ways, including adjusting eligibility requirements, increasing risk tolerance on a limited scale, relaxing some mobilisation rules, etc. |
| (7) Align collateral pools with a climate-related objective | Require counterparties to pledge collateral such that it complies with a climate-related metric at an aggregate pool level. |

Source: NGFS (March 2021)

In a second step, the NGFS experts examine how the individual measures influence the effectiveness of monetary policy, how much they help in the fight against climate change, how well they protect the central bank against climate risks and how easy or difficult the measures are to implement operationally. The results are summarised in table 3.

Table 3: Assessment of the impact of various central bank measures in the fight against climate change

Source: NGFS (March 2021)

From the NGFS’s point of view, the most effective way of combating climate change seems to be the tilting of bond purchases and an environmentally adjusted collateral pool, which only minimally affects the effectiveness of monetary policy. However, the effort required for operational implementation will be high – which ECB Executive Board member Schnabel also emphasised in her podcast a few days ago. After a fundamental decision by the ECB on "green" measures, there is still a lot of detailed work to be done.

The NGFS report does not fail to mention a possible conflict of objectives between the ECB’s primary objective of "price stability" and the tilting of bond purchases. In our view, however, neither such problems nor the difficulties of operational implementation are likely to deter the ECB’s Council from opting for a "green" adjustment of its corporate bond purchases.

¹ In table 1, “Scopes 1 - 3” means that when determining the carbon intensity, not only the emissions caused directly by the company are recorded (Scope 1), but also all indirect emissions, i.e. the emissions of energy suppliers (Scope 2) as well as all other emissions along the value chain (Scope 3). [Back to text]
Appendix: Our analyses of the ECB's green monetary policy

A "green" ECB should not buy corporate bonds at all, March 2021

The ECB's green world, February 2021

ECB - It won't be that green, July 2020

ECB: Green QE?, December 2019
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