

Chapter 5

The Green Challenge for Central Banks and Households



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Abstract Central banks should not be excluded from the list of responsible institutions to address climate change. They already have a bias in their balance sheets toward polluting industries, which should be reduced. Next, the government should design green policies that do not overburden middle class households.

5.1 Introduction

The focus on greening the economy is usually on governments, in their role as policymakers, and on firms and financial institutions, as powerful parties in the private sector. However, there is also an important role for central banks and households in meeting our society's green challenge. The ultimate goal of central banks is to safeguard the long-term prosperity of the economy, which is linked to a viable and green future. Similarly, households want to safeguard the living conditions of current and future generations. Accepting these goals allows the debate to move from the 'why' to the 'how' of making our economy more sustainable in the long-term.

For the transition to a low-carbon economy to occur, there are currently some strong biases at central banks and households. As carbon-intensive companies are also capital intensive, the ECB is overweight in corporate bonds issued by these companies and bank loans to these companies. On the household-side, the high-income and middle class households in the Western-European countries have carbon-intensive consumption patterns that are responsible for a disproportional large fraction of carbon emissions. This article shows how these biases can be addressed, while greening the economy. It also shows how climate policies can be designed in a neutral way for the middle class, both in terms of work and income.

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5.2 Who Should Act?

The Sustainable Development Goals (SDGs) form the world's business plan for a greener, more inclusive and sustainable future (UN, 2015). The SDG agenda is set by the United Nations, which suggests that the SDGs are the main responsibility of governments. However, there is growing recognition that all parties have a moral responsibility to contribute to achieving a sustainable future. We have a joint responsibility for the stewardship of our planet (Schoenmaker, 2020).

The stewardship for the environment is not without frictions or tensions. Until now, the focus has been on the large parties: on the governments at the policy side and companies and financial institutions on the private side. However, other parties should also act. Regarding policy, the European Central Bank (ECB) plays an important role in the economy. At the meta level, the ECB, like any central bank, aims for sustainable development of the economy. This means healthy development of the economy in the long run. Current levels of carbon emissions and biodiversity loss lead to unsustainable development of the economy (Loorbach et al., 2020).

The ECB can contribute in its monetary stability role as well as in its financial stability role to avert the economy from this unsustainable path. By taking a proactive role now (instead of relying on self-correcting markets), the ECB can avoid an 'I was wrong' admission of a future ECB president in, say, 2030. It appears that the ECB has currently a carbon bias in its monetary policy operations, which works against governments' ambitions to green the economy. The ECB should tilt, or more strongly target, its operations towards low-carbon corporate bonds and bank loans.

A tilt towards low-carbon bonds benefits financial stability. Bolton et al. (2020) identify climate change as the main risk for the stability of the financial system. This tail risk, which the authors call appropriately the 'Green Swan', is beyond the scope of this short article. Nevertheless, the ECB has an important role in the transition of the global financial system towards a financial system that works for people and planet (Loorbach et al., 2020).

In the private sector, the attention is also moving from the producers (companies) to the consumers (households). In the end, production and consumption equalise in the economy. So, both producers and consumers are responsible for the carbon footprint. But the carbon footprint is not distributed equally: high-income countries have a far larger footprint than middle- and low-income countries. A well-functioning price mechanism for carbon emissions, as proposed in Europe, can reduce carbon emissions. Also, to avoid relocation of carbon-intensive production activities, the European Commission is planning for a carbon border adjustment mechanism. The receipts of this carbon border tax could be channeled towards a climate fund to help low-income countries in their transition towards a low-carbon economy.

Within countries, the high-income group consumes up to half of the carbon budget. To ensure a just transition towards a low-carbon economy, a part of the receipts of the higher carbon taxes can be used to compensate the lower- and middle-income groups. Another part can be used for retraining. In this way, workers can transfer smoothly from 'brown' to 'green' sectors of the economy.

5.3 Greening Monetary Policy

The core task of the European Central Bank, as any central bank, is to support the economy. Its primary responsibility is defined as achieving price stability to keep the economy on a stable path. Without prejudice to price stability, the ECB should also support the general economic policies of the European Union (Article 127 of the Treaty on the Functioning of the European Union).

A focal point in the EU's general economic policies is the European Green Deal, which is endorsed by the European Council and the European Parliament (European Commission, 2019). Interestingly, the European Union has combined its COVID-recovery policies and green policies into a green recovery programme (European Council, 2020). As governments can only spend their money once (assuming there are limits to their borrowing), it makes sense to aim for a green recovery instead of general economic stimulus today and green stimulus in a few years time. Why finance a business-as-usual approach first and only later phase out the climate negative part of this business and stimulate the green part? You may as well start by stimulating the green part from the outset.

The same logic applies to the ECB. With its non-standard monetary policy operations, such as the Assets Purchases Programme under Quantitative Easing and the Targeted Long-Term Refinancing Operations (TLTROs), the ECB aims to stimulate the economy in order to get inflation close to its 2% target. The ECB has a long-standing policy of market neutrality. But there is evidence that the market has a bias towards carbon-intensive companies (Matikainen et al., 2017). As carbon-intensive companies, like oil and gas companies and car manufacturers, are typically capital intensive (Doda, 2016), market indexes for corporate bonds are overweighted in high-carbon companies. By taking assets proportional to the market index, the ECB is thus not climate neutral in the implementation of its monetary policy. Even worse, by doing so it is working *against* the European Green Deal. In a similar way, TLTROs refinance banks, which are still geared towards lending to SMEs and corporations that to a large extent operate in the carbon-intensive 'brown' economy.

The challenge is to let the ECB support the green recovery in a general way, without being dragged into specific green policies. The latter is the realm of elected politicians. In Schoenmaker (2021) I derive two main conditions for greening monetary policy. These conditions are a general approach (to avoid politically sensitive decisions on specific sectors and companies) and a broad asset and collateral base (to avoid distortions of monetary transmission). To satisfy both conditions, I propose a tilting approach for a central bank's direct asset holdings (related to official reserves or asset purchases under quantitative easing) and collateral holdings (related to monetary policy operations).¹ The basic idea of the tilting approach is to shift the composition of the ECB's asset and collateral portfolio towards low-carbon assets. The ECB can do that by increasing the proportion of low-carbon assets and

¹ Central banks grant loans to banks against collateral in their monetary policy operations.

at the same time reducing the proportion of high-carbon assets (see Schoenmaker, 2021, for details).

Another proposal is not just tilting, but targeting the ECB's TLTROs towards green lending. Green TLTROs are refinancing operations that provide banks with cheap funding if they lend in accordance with the EU's taxonomy of green activities (Van't Klooster & Van Tilburg, 2020). This approach is very powerful in steering funding towards the green sector of the economy.

The main barrier to green monetary policy is orthodox thinking – the ECB should only stimulate the economic recovery. The European Commission and Council have repeatedly stated their aim to combat climate change by reducing carbon emissions; the latest is the European green deal. This climate framework can be considered as the EU's general economic policies to protect the environment. European Parliament members have repeatedly asked questions to the (former) ECB president about the ECB's (lack of) carbon policies (see, for example, Draghi, 2018). It could be argued that the ECB's carbon policy in its monetary policy operations framework should be discussed (and perhaps also approved) by the European Parliament.

5.4 Greening Consumption

A widely used definition of sustainable development is in the Brundtland report (1987). The report defines sustainable development as *“development that meets the needs of the present without compromising the ability of future generations to meet their own needs”*. The Brundtland report reinforces the idea that sustainability is of concern to future generations. Households want to safeguard the living conditions of current and future generations by ‘greening’ their consumption.

In reducing the carbon-footprint of consumption, a separate challenge is to make this transition possible without increasing inequality. The idea of a ‘just transition’ stresses the need to ensure that efforts to steer society towards a lower carbon future are underpinned by attention to issues of equity and justice: to those currently without access to reliable energy supplies and living in energy poverty and to those whose livelihoods are affected by and depend on a fossil fuel economy (Newell & Mulvaney, 2013). Three elements of a just transition warrant attention:

1. Workers in high-carbon sectors;
2. Affordability for low- and middle-income groups;
3. Transition in low-income countries.

Workers in High-Carbon Sectors

Transition is about transformational change of the system rather than incremental change (Loorbach, 2010). The low-carbon transition of systems starts with new technologies and business models. It implies phasing out existing technologies and business models that cannot adapt. If markets are efficient, the Schumpeterian creative destruction can work on its own, as the highest return in the new sectors will enable the reallocation of workers. In reality, governments must help the workers to

retrain. The European Commission (2020) has mobilised € 145 billion for such a ‘Just Transition Mechanism’.

In the destabilisation and disruption stages, governments often have the kneejerk reaction to help the business that is in trouble and/or to protect the jobs involved. But it is better to focus on helping the people and changing the system, as in the Danish model, where the labour market has a high level of flexibility when hiring, social welfare system and active employment policies. Together, these three components constitute what is known as the ‘Flexicurity Model’, combining the market economy with the traditional Scandinavian welfare state (see, for example, Jespersen et al., 2008).

Whereas national governments are the most powerful players with full access to taxation and regulation, subnational governments also have a role to play as transition often occurs at the regional level. Moreover, as the latter are closer to the citizens, they can play a key role in the acceptance of a transition. Effective interplay between the national and regional levels is crucial. A historical example is the transition from coal to gas in the Netherlands, which was funded by the revenues from gas exploration (Correljé & Verbong, 2004). When the coal mines in the south of the Netherlands were closed in the 1960s, the national government provided state aid to DSM (Dutch State Mines) to reform itself and offer alternative employment. The closure of the coal mines was prepared and executed jointly by the national government and the provincial government of Limburg. DSM is now one of the leading Dutch sustainable companies.

Affordability for Low- and Middle-Classes

An important mechanism to reduce carbon emissions is carbon pricing (Stern, 2008). Early adopters of carbon taxes are the Scandinavian countries in the 1990s, which have currently carbon taxes ranging from \$50 to 130 per tCO₂ (ton of carbon dioxide). The Scandinavian experience shows that carbon pricing can be effective in changing behaviour and reducing carbon emissions. Åkerfeldt and Hammar (2015), for example, report that the gradual increase from €27 per tCO₂ in 1991 to €123 per tCO₂ in 2013 led to a shift in the energy mix from fossil fuels towards biofuels as well as heating of apartments by district heating (fuelled by household waste and various wood residues) in Sweden. The result was a reduction in carbon emissions of 23 per cent, without a negative impact on economic growth.

However, carbon taxes also increase the energy bill of households, which is not evenly distributed. Oxfam (2020) calculates that the high-income group is responsible for a substantial part of carbon emissions. Table 5.1 illustrates that nearly half of the total carbon emissions is due to the richest 10% in 2015. This high figure is stable from 1990 to 2015.

So, the high-income group contributes significantly to emissions. Part of the collected carbon taxes can be used to compensate the lower- and middle-income groups. Households can then afford low-carbon solutions for their consumption goods, housing and mobility and make their own choices as well. The change in income tax can be fine-tuned to arrange a more or less income-neutral transition for the lower- and middle-income groups. The high-income groups, which is

Table 5.1 Share of total carbon emissions (2015 figures)

Global income groups	Share of total carbon emissions
Top 10%	49%
Middle 40%	44%
Bottom 50%	7%
Total	100%

Source: Oxfam (2020)

responsible for nearly half of the emissions, would then bear the brunt of the carbon taxes. Importantly, the compensation should not be used for subsidies to buy fossil-fuel products.

Using energy-linked subsidies or taxes for households is not new. The IMF reports that pre-tax energy subsidies for fossil fuels amount to \$333 billion, which is 0.4 per cent of world GDP in 2015 (Coady et al., 2017). They are usually aimed at keeping fuel affordable for low-income households, but as subsidies on carbon-based fuels they are counterproductive and a highly inefficient way to provide support to low-income households.

Another bias is the near exemption of the large industry in some countries to protect their international competitive position. In the Netherlands, for example, households (and SMEs) are paying energy taxes which are more or less in line with the environmental damage in the form of carbon emissions and air pollution. However, the big industrial users of energy pay only about 10% per cent of the appropriate energy tax (Bollen et al., 2019). This should be increased towards the full rate. A European carbon border tax can prevent relocation of activities (see below).

Transition in Low-Income Countries

The carbon footprint is not distributed equally between countries: high-income countries have a far larger footprint than middle- and low-income countries. An increasing carbon price, as proposed in Europe, can reduce carbon emissions in Europe. To avoid relocation of production activities, the European Commission (2019) is planning for a carbon border adjustment mechanism. This carbon border tax would then be based on the carbon-intensity of the imported product or service.

As the developed countries have already used a large part of the global carbon budget since the Industrial Revolution, it is fair that these countries help the developing countries to transfer rapidly to a low-carbon economy (and thus avoid a high-carbon economic development). This is in the joint interest of developed and developing countries, as global warming due to carbon emissions is a global threat.

The Paris Agreement does not only contain provisions for reducing carbon emissions, but also provisions for financial resources to assist developing countries in implementing these reductions. Notwithstanding these pledges, the developed countries have, to date, not kept their promise to fill the Climate Change Fund. An alternative might be that the European Union uses its receipts from the carbon border adjustment to fund the Climate Change Fund. This will speed up the low-carbon

transition in low- and middle-income countries in two ways: a substantial carbon border tax for carbon-intensive products (exported to the European Union) and a subsidy for adopting low-carbon technologies.

Acemoglu et al. (2012) show that optimal policies to redirect technical change to cleaner technology are a mix of carbon taxes (to make dirty technology more expensive) and subsidies for clean technology (to redirect technological research and development). Developing breakthrough technologies should be one of the main priorities for the EU, if it wants to be instrumental in reducing worldwide CO₂-emissions.

5.5 Conclusion

While the low-carbon transition tends to focus on governments and private parties as key players, this article shows that central banks and households also have a role to play. The starting point is that carbon emissions are not equally distributed. The ECB appears to have a carbon bias in its asset and collateral portfolio. Next to that, the high-income group is a major contributor to the consumption-based carbon footprint.

The solutions described in this chapter reduce carbon emissions and mitigate potential inequalities. Climate policies can be designed in a neutral way for the low- and middle-income groups, both in terms of work and income. In such a ‘just transition’ scenario, the social and environmental goals of sustainable development can be jointly achieved. An appropriate narrative of such a just transition is crucial in the political discourse.

This narrative can be on the following lines: We need to reduce carbon emissions to address global warming which has major consequences for us and our children. Carbon pricing is a tool to transition from a high to a low-carbon economy. As governments do not need extra money, the receipts from carbon pricing can be used to guide the transition of workers from high to low carbon sectors and to compensate low- and middle-income groups for higher consumption prices.

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