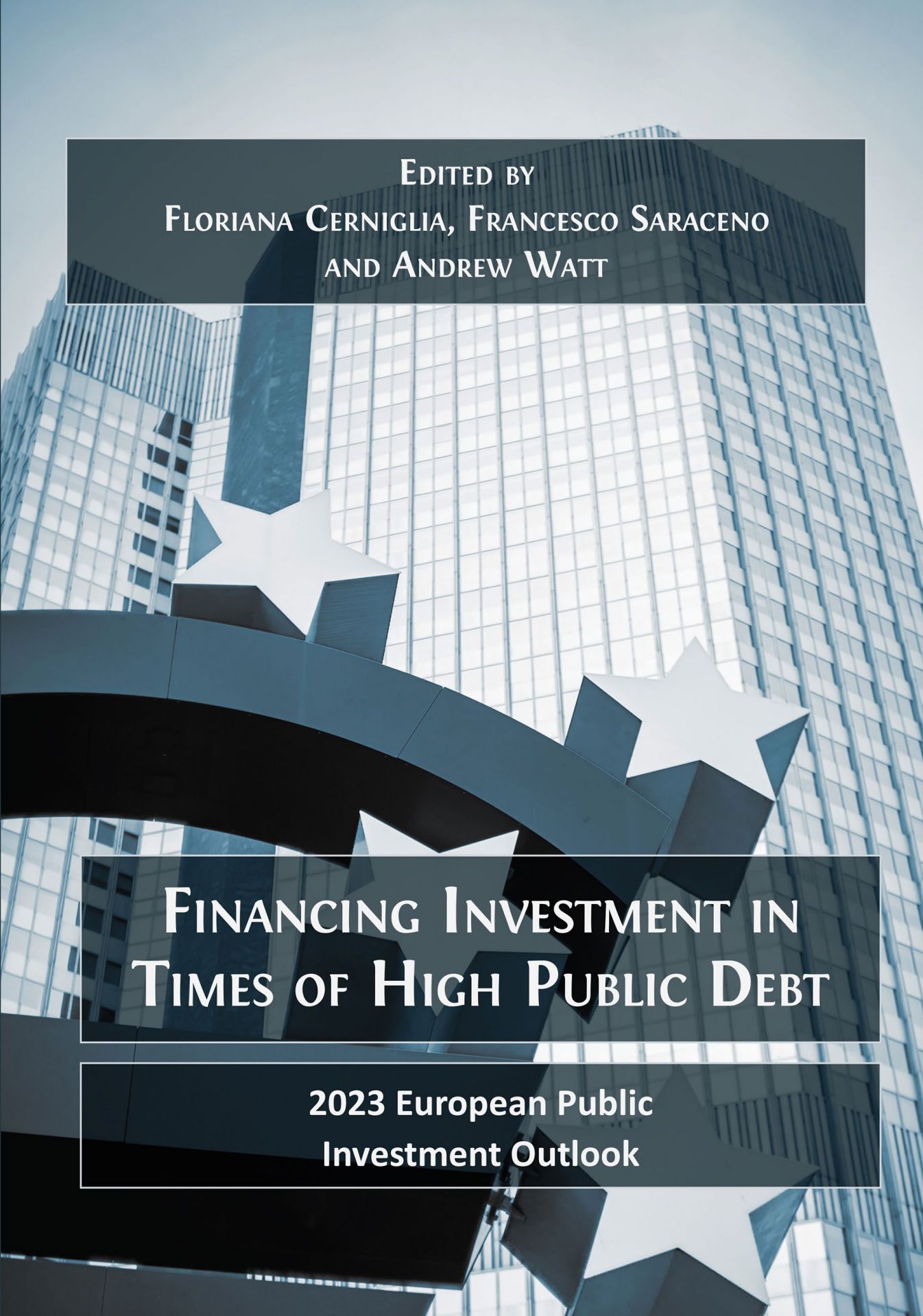

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Financing Investment in Times of High Public Debt

2023 European Public Investment Outlook

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9. Financing Climate Investment in the EU: the Role of Monetary and Financial Policies

Yannis Dafermos and Maria Nikolaidi

The climate crisis requires an unprecedented transformation of the EU fiscal, industrial, trade, and regulatory policy frameworks. However, this transformation needs to be supported by the greening of the EU monetary and financial policies. This would facilitate the financing of the large amount of investment in climate mitigation and adaptation that is needed in the coming years. In this chapter, we present a set of tools that central banks, financial regulators, and financial supervisors can employ to advance the EU decarbonisation and climate resilience targets. We highlight that these tools should be used in a context of a concrete 'sticks and carrots' policy mix framework that moves beyond market-based approaches.

9.1 Introduction

The EU needs to urgently increase its investment in climate mitigation and adaptation. Climate mitigation investments in renewables, energy efficiency, and green technologies are essential for achieving the EU 2050 net-zero target. Climate adaptation investments in flood defences, climate-smart agriculture, water management, early-warning systems, and climate-resilient transport are necessary for limiting the adverse effects of increasing global warming on EU economies and societies.

Fiscal, industrial, trade, and regulatory policies have a prominent role to play in scaling up climate investment and reducing carbon-intensive investment. The combined use of carbon taxes, green subsidies, green public investment, and regulations about carbon-intensive goods/assets is a prerequisite for achieving climate targets. However, monetary and financial policy tools also have a crucial role to play in shifting investment from 'dirty' projects towards green projects and facilitating the financing of the additional investment that is necessary to decarbonise EU economies and increase climate resilience.

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In this chapter, we analyse two categories of monetary/financial- tools that can be used to support climate investment in Europe: (i) central banking tools and (ii) financial regulation/supervision tools.[1] Table 9.1 provides an overview of selected monetary/financial policy tools and their potential climate calibrations. In the rest of the chapter, we analyse these tools in detail and discuss how they can be applied in the EU.

Table 9.1 Selected Monetary/Financial Tools for Greening Public and Private Investment

Category	Monetary/financial tool	Climate calibration
Central banking	Collateral frameworks	Lower haircuts for green (public and private) assets; higher haircuts and exclusion for dirty private assets
	Asset purchases	Tilting of purchases towards greener (public and private) assets; exclusion of dirty private assets
	Refinancing operations	Lower refinancing rates for banks with a high representation of green loans on their balance sheet; higher rates for banks with many dirty loans on their balance sheet
Financial regulation/supervision	Capital requirements	Lower capital requirements for green loans; higher capital requirements for dirty loans; one-for-one fossil-based rule
	Credit controls	Dirty credit ceilings; green credit floors
	Mandatory disclosures	Prudential climate transition and resilience plans on how banks intend to align their financial investments with net zero and climate resilience targets

Note: In the transactions between financial institutions, the 'haircut' captures the difference between the market value of the asset that is used as collateral and the value of the loan that can be obtained against this asset. The lower the haircut, the higher the loan that the borrower can receive for a given value of the collateral.
Source: Authors' elaboration.

1 Due to space constraints, our list of monetary/financial tools is not comprehensive. For example, we have not explicitly analysed tools related to shadow banking; on such tools, see Gabor et al. (2019) and Kedward et al. (2022). We have also not explicitly analysed the role of public banking.

9.2 Central Banking Tools

There are three main policy tools that central banks can use to support decarbonisation and climate adaptation. All these tools require approaches that identify how strong or weak is the climate performance of specific financial assets (for example, bonds or loans). Climate performance can be captured by metrics that reflect (i) the emissions profile of borrowers both in the past and the future, (ii) the activities that borrowers engage in (if they are environmentally harmful or if they contribute to mitigation/adaptation based on taxonomies of activities), and (iii) the association of specific financial instruments with climate mitigation/adaptation projects (for example, green bonds).[2]

The first tool is the greening of collateral frameworks. Central bank collateral frameworks identify the types of financial assets that commercial banks can use to get access to central bank liquidity (Dafermos et al. 2022). In general, the assets that are included in collateral frameworks experience higher demand in the financial markets. This tends to reduce the interest rates of these assets and, thus, the cost of borrowing for their issuers (see, for example, Nguyen 2020; Pelizzon et al. 2020). In addition, the demand for financial assets is generally higher for those assets that are assigned a lower haircut in collateral frameworks. Therefore, central banks' decisions about which assets to include in collateral frameworks (and what haircuts to assign to them) affect the cost of borrowing for issuers of securities.

The greening of collateral frameworks can be associated with several types of assets. First, the greening can be applied to non-financial corporate bonds. This is particularly important because existing collateral frameworks typically suffer from a carbon bias in the sense that bonds related to carbon-intensive activities of companies are over-represented in these frameworks (see Dafermos et al. (2021) for the case of the Eurosystem collateral framework).[3] Increasing the haircuts for bonds issued by companies with weak climate performance and reducing the haircuts for green corporate bonds and bonds issued by strong climate performers can help the decarbonisation of the corporate bond markets and can financially support investments in climate mitigation and adaptation.

Second, green bonds issued by governments and national or supranational public banks can receive preferential treatment in central banks' collateral frameworks. Over the last years, a growing number of European governments have been issuing green sovereign bonds (see Figure 9.1). Poland and France were the first governments that did so in 2016 and 2017. Since then, many other EU governments have also issued green

2 For more details, see, for example, Dafermos et al. (2023).

3 This over-representation is primarily related to the fact that companies that engage in carbon-intensive activities tend to have a high representation in the bond market (to some extent because of their large size) and they typically receive good credit ratings.

bonds for the financing of specific green projects.[4] Many green bonds have also been issued by national and supranational public investment banks, such as the European Investment Bank and KfW. Making these bonds eligible in central bank collateral frameworks with relatively low haircuts can help reduce the cost that governments and public banks face when they invest in climate mitigation and adaptation.

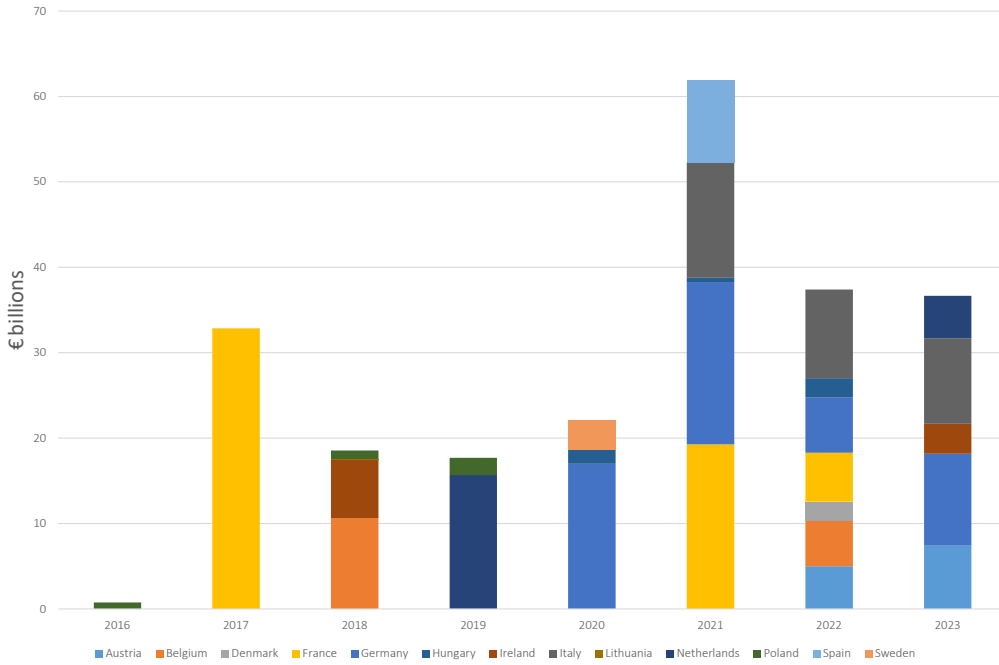

Fig. 9.1 Green Sovereign Bonds, Issued Amounts in EU countries, 2016–2023 (in €bn).
Note: The 2023 data include bonds issued as of October 2023.
Source: Refinitiv Eikon

Third, central banks can incorporate climate criteria into the eligibility and haircuts associated with asset-backed securities and covered bonds issued by financial institutions. This would prompt financial institutions to green the loans that they provide to households and firms. However, the data requirements for the greening of this component of collateral frameworks are generally higher than what is the case with public and non-financial corporate bonds.

The second tool that central banks can use to support climate mitigation and adaptation is the greening of asset purchases. As part of their unconventional policies, the European Central Bank (ECB) and other EU central banks have bought several types of assets, including securities issued by governments, public banks, non-financial corporations, and financial institutions. Central banks can tilt these purchases based

4 There is some evidence for the existence of a 'sovereign greenium': green sovereign bonds enjoy a lower yield relative to similar conventional sovereign bonds (see Ando et al. 2023).

on climate criteria. In other words, they can buy more bonds with a stronger climate performance and less bonds characterised by a weaker climate performance. During the current period, one in which central banks are shrinking their balance sheets as a response to high inflation, tilting implies (i) the purchase of greener assets for reinvestments that central banks conduct due to maturing securities and (ii) the active selling of carbon-intensive bonds of non-financial corporations and their partial replacement with greener assets.

The third tool that central banks can use is the greening of their refinancing operations. Through refinancing operations, commercial banks get access to short-term and long-term liquidity. The terms under which they get access to this liquidity can have implications for their credit provision decisions. To make refinancing operations greener, central banks can reduce the interest rates for banks that have a relatively high proportion of green loans on their balance sheets and set higher refinancing rates for banks that provide too many dirty loans.[5] This would help the decarbonisation of both corporate and mortgage loans.[6]

All these tools can be applied by European central banks. Importantly, the ECB has already attempted to decarbonise its corporate bond purchases as part of its climate action plan. In October 2022, it started applying climate criteria to the corporate bonds bought as part of its reinvestments (ECB 2022b).[7] However, the ECB stopped the majority of its reinvestments in July 2023, effectively terminating the decarbonisation of its corporate-bond purchases (ECB 2023). To continue the decarbonisation of its asset purchases, the ECB can start selling bonds issued by companies with a weak climate performance, replacing them with bonds that are conducive to climate mitigation and adaptation (see Dafermos et al. 2023). The ECB can also consider supporting more actively green bonds issued by EU governments and public banks.[8]

The ECB has considered greening its collateral framework in its climate action plan (ECB 2022a). However, it has not yet taken any concrete actions and, in December 2022, it announced that it does not intend to incorporate climate considerations into the haircuts of its collateral framework.[9] Given the fact that the Eurosystem collateral

5 Green refinancing schemes have been adopted, for example, by the Bangladesh Bank, the People's Bank of China (PBoC) and the Bank of Japan. In 2009, the Bangladesh Bank established a refinancing scheme to support specific green projects (see Khairunnessa et al. 2021). In 2021, the PBoC launched the Carbon Emission Reduction Facility which offers low-interest loans to financial institutions that help firms decarbonise their operations (see PBoC 2021). In the same year, the Bank of Japan introduced a green loans scheme, providing zero-interest financing to lenders supporting climate-related projects (see Shirai 2022).

6 For a proposal on how to green the ECB's Targeted Longer-term Refinancing Operations (TLTROs), see van't Klooster and van Tilburg (2020) and van't Klooster (2022). For the carbon content of TLTRO III, see Colesanti Senni et al. (2023).

7 As of July 2023, the entire Eurosystem corporate bond portfolio was about €385 billion. Reinvestments were a small proportion of this portfolio (less than 10% on an annual basis).

8 This should not, however, change the ECB's purchases of non-green sovereign bonds.

9 The rationale that the ECB used to support this decision was that the existing haircuts schedule is sufficiently protective against climate risks. See ECB (2022c).

framework is a permanent central-banking tool, its greening is particularly important and the ECB should revisit its decision to postpone the incorporation of climate issues into the collateral framework. Moreover, the ECB and other EU central banks could design the greening of their refinancing operations. This is particularly important in the current environment of high interest rates. Green refinancing operations can help keep the interest rate on green loans and mortgages relatively low, encouraging green investments which often have high upfront costs and, thus, require external finance more than traditional investments.[10]

9.3 Financial Regulation/Supervision Tools

Currently, a significant amount of the financing that is provided to companies by EU banks supports dirty activities. For example, BNP Paribas, Deutsche Bank, and ING collectively provided more than $300bn of fossil fuel-related loans during the period 2016 to 2022 (Figure 9.2). Redirecting bank flows from such dirty activities towards green ones is, therefore, significant for greening assets related to buildings, manufacturing, power, and transport in the private sector. The greening of bank credit is also important since the private non-financial sector in the EU still relies significantly on bank loans for the financing of their activities. For example, more than 60% of the external finance for non-financial corporations in the euro area comes from bank loans (see Holm-Hadulla 2022), with this being more prominent in the case of Small and Medium-sized Enterprises (SMEs) (ECB 2021). On top of it, banks need to green the mortgages they provide to households. This would support residential investment for the decarbonisation of the housing stock in Europe, which, in many countries, is very energy inefficient and relies too much on fossil fuels for heating.

10 See Bloomberg (2023).

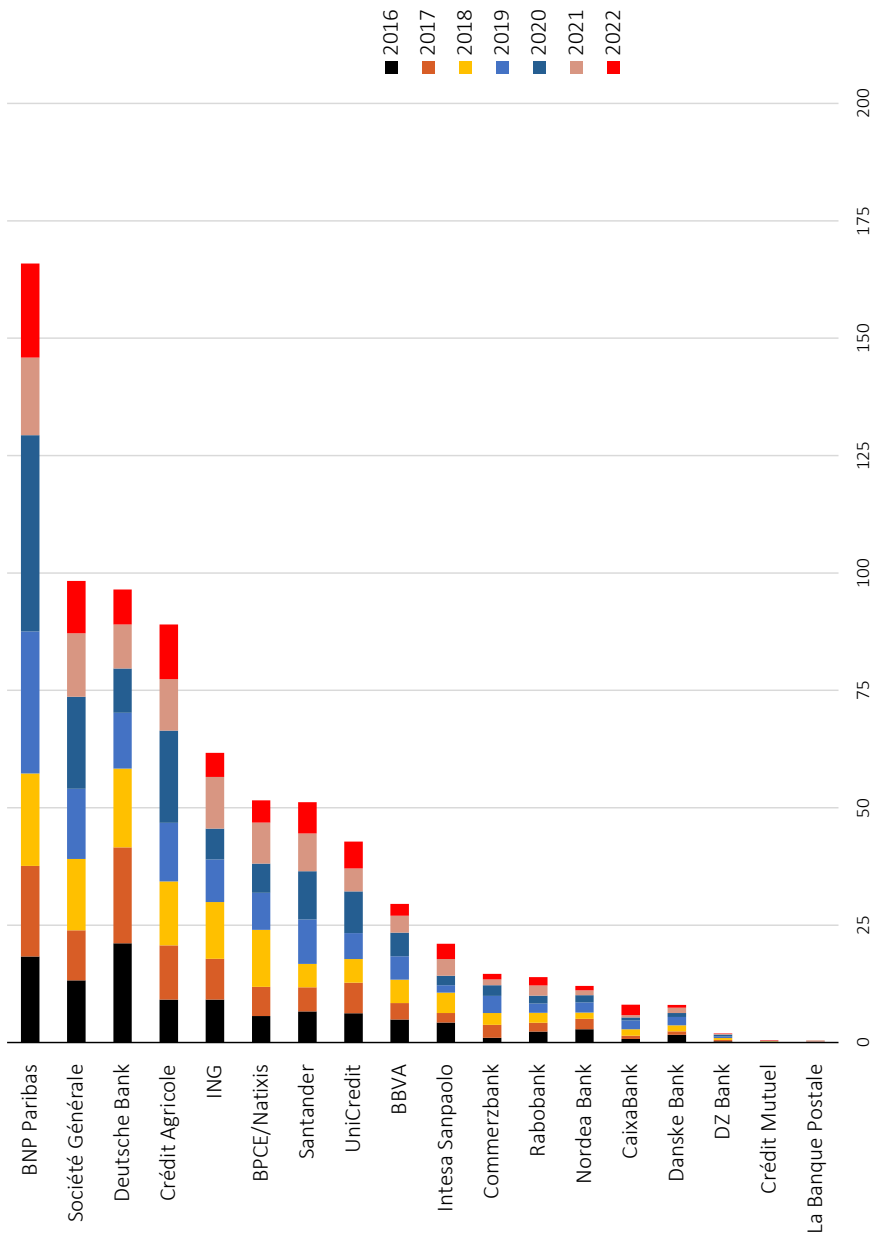

Fig. 9.2 Bank Financing of Fossil Fuels, EU, 2016–2022 (in US$bn).
Note: Fossil fuels include tar sands oil, Arctic oil and gas, fracked oil and gas, liquefied natural gas, ultra coal power, and coal mining.
Source: Rainforest Action Network (RAN), https://www.ran.org/

Apart from the greening of refinancing operations, a wide range of financial tools can be used to make bank financing climate-aligned. First of all, there are several tools related to capital requirements. One example is the green-differentiated capital requirements that can take the form of a green supporting factor, whereby the capital requirements against green loans are reduced, and/or a dirty penalising factor, whereby the capital requirements against dirty loans increase (Dafermos and Nikolaidi 2021; 2022). Such requirements can increase the lending interest rate and reduce credit availability for dirty loans compared to green loans. In the EU, a specific form of a green-supporting factor has been applied in Hungary (see MNB 2019; 2021). Magyar Nemzeti Bank (MNB) has lowered capital requirements that are linked to energy-efficient properties for the period 2020–2024 (see also CBI 2020). A specific case of a dirty-penalising factor is the one-for-one fossil-based rule. This rule suggests that banks should hold one euro of capital for each euro of loan that they provide to finance a fossil-fuel project (Philipponnat 2020). This would make fossil financing extremely expensive for banks.

However, climate-adjusted capital requirements might not lead to a significant reallocation of credit. A more direct way of achieving a green reallocation is the use of credit controls (Kedward et al. 2022). These can take the form of dirty credit ceilings that put a cap on the amount of credit that banks provide to borrowers with a poor climate performance. They can also take the form of green credit floors that make it compulsory for banks to allocate a specific proportion of their credit to green projects/borrowers with a strong climate performance.[11]

Generally speaking, EU financial regulators are reluctant to use the above-mentioned tools. As far as capital requirements are concerned, an issue that is often raised by financial regulators is that these adjustments in requirements are not risk-based. Thus, regulators are willing to consider climate adjustments in requirements only if it can be proved that green credit is less risky than dirty credit. Although the latter might be true, this way of looking at risks is narrow and micro-based. From a macroprudential perspective, any tool that decarbonises the financial system and supports climate adaptation finance can reduce climate-related systemic risks. There are at least three reasons for that. First, a decarbonised financial system can be more resilient to shocks related to future climate policies, such as carbon taxes and environmental regulation, which can disproportionately affect borrowers with a high climate footprint. Second, the active support of green credit and the discouragement of dirty credit can be conducive to lower EU emissions and, thus, lower global warming. This, in turn, can make the global financial system less exposed to physical risks associated with climate-related events and physical phenomena linked to the gradual increase in temperature (such as the rise in sea level). Third, any financial regulation that supports climate adaptation can make the EU economies less climate vulnerable. This, in turn, can reduce the financial fragility of the banking sector.

11 Green credit floors have been used, for instance, by the Bangladesh Bank and the Reserve Bank of India (see Baer et al. 2021).

Therefore, EU regulators need to be more open to the idea of using some forms of climate credit controls. Although credit controls have become an unfashionable tool in Europe over the last decades, the severity of the climate crisis and the failure of markets to address this crisis suggests that a rethinking of credit controls is necessary. Climate credit controls can be successful under two conditions. First, the definition of what is 'green' and what is 'dirty' should not be sector-based. It should, instead, rely on micro-based metrics about the climate performance of borrowers. Second, the evaluation of credit risk should continue to take place, including the evaluation of climate-related financial risks. This evaluation should be reflected in capital requirements. This would mean that only 'green' borrowers with relatively low risks would benefit from climate credit controls.

Financial supervision also has a useful role to play in supporting climate investments in the EU. One tool that financial supervisors can use is the climate transition and resilience plans which can take the form of mandatory disclosures about how banks intend to align their financial investments with the EU net zero and climate resilience targets.[12] Financial supervisors can ask banks to submit these plans within a certain time horizon and, if they find them unsatisfactory, they can apply penalties to banks, for example by asking them to hold more capital.

9.4 Conclusions

Monetary and financial tools can play a significant supportive role in achieving the EU targets for climate investment. Central banks, governments, and financial authorities across Europe can select among the tools that we included in our toolbox based on their national needs and mandates. But, to successfully do so, they need to move beyond conventional economic thinking that typically opposes the use of policies that are considered too interventionist from a market perspective. Instead, EU public institutions and governments should adopt a systems-based economic thinking that permits a more holistic understanding of the interactions between climate, economic, financial, and social systems. From a political economy perspective, this thinking suggests that market-based approaches that rely on derisking (Gabor 2023) are unlikely to succeed. Instead, a concrete 'sticks and carrots' policy mix is necessary whereby monetary/financial policy tools are implemented in conjunction with other climate fiscal, trade, and regulation policies that incentivise green investments and penalise dirty spending. EU authorities and governments also need to apply such a policy mix in a way that is consistent with global climate justice issues. Green investments are often associated with green extractivist practices that harm ecosystems and communities in the Global South (Dafermos 2023). The EU has a historical responsibility to achieve a quick decarbonisation without increasing its exploitation of the Global South.

12 For a comprehensive discussion of net zero transition plans, see Dikau et al. (2022).

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