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Non-neutral Monetary Policy towards Sustainability in the Eurozone – an Analysis of Refinancing Operations and Minimum Reserve Policy

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Abstract

This article reviews the discussion with respect to a justification of a non-neutral monetary policy and analyses design options for such a policy. The analysis is limited to refinancing operations and minimum reserve policy. Monetary policy with a green bias, while being controversially discussed, is meanwhile widely accepted and partly realised by the ECB. With respect to sustainability in a broader sense, however, the ECB could – and should – do more. In this context, two proposals are presented as to how – in line with the mandate and the statute of the European System of Central Banks – a non-neutral monetary policy towards sustainability could be designed.

Keywords: Monetary Policy, Euro Area, Refinancing Operations, Minimum Reserve Policy, Sustainability

JEL Classification: E52, E58, Q01

I. Introduction

Recently, monetary policy in the Eurozone has been increasingly green. The European Central Bank (ECB) decided on a roadmap of climate-related actions (*ECB* 2021a; *ECB* 2021b), thus deviating from the idea of neutrality, but in accordance with the mandate and the statute of the European system of central banks (ESCB). However, the mandate of the ESCB – besides calling for price stability – calls for the support of economic policies in the Union not only with regard to environmental goals, but also with regard to other sustainability-related objectives set out in Art. 3 of the Treaty on European Union (TEU). So, more than a green monetary policy is called for, namely a non-neutral monetary policy in a broader sense of sustainability. Monetary policy with a green bias has been discussed controversially (*Kaldorf/Krause/Radke/Wicknig* 2022; *Kaufhold* 2022; *Li/Schickfus* 2021; *Ramin,* forthcoming, *Schnabel* 2022a; *Schwarz* 2022;

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Treptow 2021, *Walter* 2023). A non-neutral monetary policy in a broader sense of sustainability has, however, not been analysed so far.

Against this background this paper analyses the monetary policy instruments mentioned in the statute of the ESCB, namely refinancing operations and minimum reserve policy, with respect to the question, in which way a non-neutral monetary policy towards sustainability is possible and how far problems of conflicting goals can be solved, if the ECB wants to address more than one objective mentioned in Art. 3 TEU. The paper concludes, that there are various possibilities to realise a non-neutral monetary policy towards sustainability and that the respective problems of conflicting goals can be solved.

The article is structured as follows: section II reviews the discussion with respect to a justification of a non-neutral monetary policy. In section III, a multitude of options is described, how monetary policy instruments could be designed in a non-neutral way towards sustainability. In section IV, two proposals are presented as to how – in line with the mandate of the ESCB and potentially solving the problem of conflicting goals – simultaneously more than one objective mentioned in Art. 3 TEU could be strived for with help of a non-neutral monetary policy. Thus, section V concludes, that with respect to sustainability in a broader sense the ECB could – and should – do more.

II. Justification of a Non-neutral Monetary Policy

In the past, the ECB followed – while primarily striving for price stability – the principle of market neutrality (*Schnabel* 2020). So, a non-neutral (e.g. "green") monetary policy was rejected. For several reasons, this was and is, however, not appropriate.

1. General Justification

A non-neutral monetary policy can be justified for several reasons. Firstly, there is market failure with respect to monetary allocation, that is market failure on the credit markets where new money is put into circulation: yield-orientated commercial banks (in the following shortly banks) grant loans (thereby creating new money) primarily to borrowers which want to finance profitable projects, provided the borrowers are creditworthy. For companies, this means: the more costs they can externalise, the better are their chances of obtaining a loan. The creation of "credit money" thus promotes the externalisation of costs, e.g. environmental costs caused by pollutant emissions. Also strategies for circumventing social standards or outsourcing social costs are promoted. As a result, the concept of a market neutral monetary policy is poorly compatible with environmental and social policy objectives.

Secondly, money creation with help of bank loans also promotes regional and social polarisation thereby reducing economic and social sustainability (*Fuders* 2024; on polarisation and problems of polarisation *Wilkinson/Pickett* 2009; *Hartmann* 2018; *Piketty* 2014; *Piketty* 2020). For example, the dynamics of credit markets could reinforce existing regional polarisation. C.p., the chance of obtaining a loan is greater in economic "hot spots" than in the periphery, i.e. greater in the Frankfurt/Main-area than in the Saarland. A neutral monetary policy would in this situation not support regional convergence and so may complicate (European) regional policy. Against this background and with respect to the objectives laid down in Art. 3 TEU, the discussion on a non-neutral monetary policy has to cover regional and social objectives, too, and – generally – criteria of ecological, economic and social sustainability. Furthermore, yield-orientated lending is – procyclically – primarily carried out when the economy is doing well, and less so in times of economic crisis. So, economic fluctuations would be exacerbated (thus contradicting objectives of stabilisation policy) if central banks would not "counteract" with help of a monetary policy, which is non-neutral over time, like it was realised in the time of the pandemic crisis.

Thirdly, looking at monetary policy, the concept of neutrality is unclear. No procedure for allocating new money is without effects on competition and therefore strictly neutral. Moreover, market neutrality can be interpreted in different ways: For example, when the ECB buys corporate bonds from banks, it could strive for neutrality with regard to the market for bonds or rather with regard to competition between banks or between bond-issuing companies. Alternatively, the ECB could – with different results for neutrality – endeavour to achieve a regional balance when buying bonds.

Against this backdrop, the ECB is attempting to overcome the concept of neutrality and to develop a concept of market efficiency as an orientation criterion for its monetary policy. Following the ECB, monetary policy according to this concept needs to be consistent with maintaining a functioning price discovery mechanism but would also take into account the problems of market failure respectively problems of externalities (*Schnabel* 2021).

In the Eurozone, a central (forth) argument in favour of a non-neutral monetary policy is the mandate of the ESCB as set out in Art. 127.1 of the treaty on the functioning of the EU (TFEU). Here, neither market neutrality nor market efficiency are mentioned. Thus, a monetary policy that deviates from market neutrality is not per se contrary to the mandate. In general, Art. 127.1 TFEU only requires the ESCB to act in accordance with the principle of an open market economy with free competition favouring an efficient allocation of resources and to observe the principles set out in Art. 119.3 TFEU, namely stable prices, sound public finances and monetary conditions and a sustainable balance of payments. Moreover, general principles of proportionality and institutional balance and the prohibition of crediting governments or other public authorities as set out in Art. 123 TFEU have to be respected (*ECB* 2021c).

In essence, the mandate of the ESCB calls for a monetary policy that deviates from (market) neutrality. Following Art. 127.1 TFEU the ESCB shall "without prejudice to the objective of price stability .. support the general economic policies in the Union with a view to contributing to the achievement of the objectives of the Union as laid down in Article 3 TEU". Art. 3.3 TEU, for instance, provides that the EU "shall work for the sustainable development of Europe based on balanced economic growth and price stability, a highly competitive social market economy, aiming at full employment and social progress, and a high level of protection and improvement of the quality of the environment" and shall "promote scientific and technological advance, social justice and protection … economic, social and territorial cohesion and solidarity among Member States". Most of these goals are in one way or another sustainability-related.

There are, however, arguments against a non-neutral monetary policy. Firstly, if the ECB-council supports the general economic policies in the Union, this may lead to structural effects, which normally only a parliament with democratic legitimation should decide. But, following the mandate, ESCB should only support the respective policy. So the fundamental decisions are made without a democratic deficit. Obviously, a concrete policy in the Union already has to exist, before the ECB can come in to support it. So, for example, a green monetary policy is justified, after the Union decided on a "green deal" (*EU-Commission* 2019) and on a climate law to enforce the deal (*EU-Commission* 2021) and, furthermore, committed itself in the context of the Paris-agreement concerning climate policy (*EU-Council* 2015), all of which has consequences for the economic policies, when it comes to a green transformation of the economy. In this case, the mandate calls for the support. But if it is obligatory for the ECB to support the climate policies in the Union, could this jeopardise the independence of the ECB as set out in Art. 130 TFEU (*Ramin* forthcoming)? Others argue, that the independence of the ECB needs not to be jeopardised, if the ECB supports the general economic policies in the Union (*Kriwolutzky/Volz* 2023). They argue, – in line with the ECB itself (*ECB* 2021c) – that the ECB does not have to take on additional tasks, but only needs to differentiate its instruments in a way in line with the mandate. The ECB does not have to pursue an own economic policy. The primary responsibility for the general economic policies in the Union – e.g. for climate-related, regional or social policy – remains within government policy. So, the ECB may remain independent concerning monetary policy – being only bound by the mandate of the ESCB.

Secondly, the derivation of an active green monetary policy via the ECB's secondary mandate is seen as problematic. The inclusion of climate policy objectives by the ECB could "open the door" to the inclusion of other objectives mentioned in Art. 3 TEU into the ECB's monetary policy being pursued in future, which finally could jeopardise the independence of the central bank (*Kaldorf/Krause/Radke/Wicknig* 2022). On the other hand, not all other objectives are related to economic policy, so there is a cutoff and – for instance – aspects of gender inequality are not relevant at this place. This point will be further analysed below.

Thirdly, possible goal conflicts between the first objective (price stability) and the second objective (support of the general economic policies) are mentioned. So, fighting inflation might call for restrictive monetary policy, which for example leaves no room for purchase of green bonds (or only within reinvestment in the case of maturing bonds). If, on the contrary, the ECB engages in supporting the green transformation of the economy by buying green bonds, political pressure might develop to compromise on price stability (*Schwarz* 2022). Here, however, the mandate is clear by formulating a hierarchy between first and second objective. Following Art. 127.1 TFEU, monetary policy is only compatible with the mandate of the ESCB if price stability is not jeopardised. Moreover: although it is conceivable that a non-neutral monetary policy jeopardises price stability, the respective conflict seems avoidable. This is so because decisions on monetary policy can be separated. For example, decisions on the volume of monetary policy activity can be made with a view to price stability, while – later – separate decisions on monetary allocation can be made with a view to selected objectives of Art. 3 TEU. This separation of decisions would be in line with the Tinbergen rule, according to which each economic policy objective requires an independent instrument (respectively measure) or two objectives cannot be achieved simultaneously with one measure (*Tinbergen* 1952).

Therefore, as the mandate of the ESCB states two objectives (price stability and to support the general economic policies in the Union), two independent measures are required, for instance a decision on the volume of monetary policy activity (which is relevant for price stability) and a decision on monetary allocation, that is, how respectively where money is brought into circulation. The ECB can, for example, fix planned bond purchases in terms of the volume of purchases but in detail favour green bonds. So, with an adequate separation of general and specific monetary policy decisions, an inflation-neutral but in other respects non-neutral monetary policy could be realised in line with the mandate of the ESCB. In other words, a neutral monetary policy in the Eurozone that does not address the objectives of Art. 3 TEU may be not compatible with the mandate of the ESCB.

2. *Special Justification of a Green Monetary Policy*

Green monetary policy is – as explained – implicitly called for by the mandate of the ESCB. Moreover, in view of the urgency of the climate problem, it would be negligent to forego possible stimuli from a green monetary policy if there are no conflicting objectives. This view is meanwhile widely accepted, as the following citations may show.

- The Central Banks and Supervisors Network for Greening the Financial System (NGFS) writes in its Report "Adapting central bank operations to a hotter world": "Where it falls within their policy remit, central banks could also consider going beyond the adjustment of their operational frameworks solely from a risk management perspective by seeking to ensure that their monetary policy operations do not undermine the transition to a low-carbon economy and/or by exploring ways in which they can actively support that transition (*NGFS* 2021)."
- The ECB writes: "The Eurosystem could perform a supportive catalytic function in financial markets with its monetary policy measures. This would be useful in situations where effective collective action is required to achieve the European Union's binding greenhouse gas reduction targets, but where heterogeneous market practices and standards, market inefficiencies or other obstacles need to be overcom (*ECB* 2021c)."
- And, following *Elderson* (2021), "the treaties explicitly demand, that environmental aspects have to be integrated in the definition und realization of all EU-policies and activities, including the actions of ECB". So, "this framework does not give […] ECB a specific mandate for climate policy, but it does demand, that ECB takes into account the environmental objectives and policies of the EU when striving to reach its own objectives."

In particular, green monetary policy can be justified because climate change triggers risks for price and financial market stability (*Kriwolutzky/Volz* 2023). A green monetary policy may be necessary in the Eurozone if climate crises jeopardise price stability or the Union's environmental objectives and/or the stability of the financial system (*Schnabel* 2022b). Climate-change-induced problems like storms, heat, drought or flooding can, for example, damage economic facilities and thus hinder economic activity. Production and harvest slumps can then lead to a shortage of goods and thus to supply-side inflation (climateflation), and also can contribute to losses in employment and value creation. Moreover, the value of financial assets can shrink in the wake of such crises and bank loans can become "non-performing", which in turn can jeopardise the stability of banks. The threat of such a scenario on an international scale is suggested by several reports of the Intergovernmental Panel on Climate Change (IPCC), which state that the effects of climate change could materialise more quickly and to a greater extent than previously assumed by the IPCC, meaning that the time for climate policy measures is pressing (*IPCC* 2023, Summary for Policymakers).

Additionally, in the climate context, possible economic and ecological non-linearities provide an additional justification for green monetary policy. If positive technological tipping points shall be achieved in order to prevent negative ecological tipping points from being reached, a new approach for a successful policy can be derived from the theory of tipping points (*Bretschger/Leuthard* 2023, translation by the author): "first, new [eco-]technologies … should be significantly supported financially by general public funding, unless a technological and/or political tipping point is reached, at which the cost advantage is in favour of the new technologies. [Then] … , those technologies will become established on the market as a self-runner. … Once a political tipping point is reached at which the median voter adopts the new technology, the political majority can enforce an efficient environmental policy including the "polluter-pays principle" and decide whether to refinance the subsidies of the first phase. As soon as a desired new technology is sufficiently widespread, political majorities can be found more and more quickly in favour of restricting the old technology". For example, the German EEG subsidisation helped PV-technology to triumph worldwide by promoting economies of scale (*ISE* 2022). At the same time, eco-taxes and Emissions Trading Systems (ETS) supported efficient transformation processes.

A support of "scalable" eco-technologies could, principally, not only be realised by public funding, but also indirectly be supported by non-neutral monetary policy. Green monetary policy can, in this context, complement environmental policy instruments by promoting „PV-like" effects. After a spreading of the new eco-technology ETS and CO_2-pricing could induce (further) efficient adaptation.

To summarise: green monetary policy and – more generally – a non-neutral monetary policy towards sustainability can well be justified. But conflicts could arise between a non-neutral monetary policy and price stability, and also between a green monetary policy and a monetary policy with a view to other objectives set out in Art. 3 TEU. A non-neutral monetary policy towards sustainability in a broader sense would be difficult to realise if conflicts between diverse aspects of sustainability could not be resolved, e.g. if a regionally orientated monetary policy got in the way of a green monetary policy and vice versa. Before analysing in section IV how such conflicts with regard to different aspects of sustainability aspects could be resolved, the following section III considers options for the instrumental design of a non-neutral monetary policy. Later, two specific proposals are presented.

III. Shaping a Non-neutral (Sustainability-related) Monetary Policy in the Eurozone

This section only considers monetary policy instruments that are mentioned in the Treaty of the Functioning of the European Union (TFEU), Protocol No 4 on the Statute of the European System of Central Banks and of the European Central Bank, Art. 18 (open market and credit operations) and Art. 19 (minimum reserves) and that can therefore be implemented with legal certainty. The section is therefore about:

- Outright transactions (Art. 18.1 TFEU, Protocol No 4, first indent: "ECB may operate in the financial markets by buying and selling outright (spot and forward) or under repurchase agreement and by lending or borrowing claims and marketable instruments, whether in euro or other currencies, as well as precious metals"),
- Credit operations, also referred to as (main or longer-term) refinancing operations (Art. 18.1, TFEU, Protocol No 4, second indent: "ECB may conduct credit operations with credit institutions and other market participants, with lending being based on adequate collateral"), and
- Minimum reserve policy (Art. 19.1 TFEU, Protocol No 4: "ECB may require credit institutions established in Member States to hold minimum reserve on accounts with the ECB and national central banks in pursuance of monetary policy objectives. Regulations concerning the calculation and determination of the required minimum reserves may be established by the Governing Council").

1. *Options for Refinancing Operations and Minimum Reserve Policy*

Because Art. 18.1 and 19.1 TFEU, Protocol No 4 are formulated rather non-specific, the ECB has numerous options when choosing the specific design of the instruments of monetary policy. Concerning transactions with commercial banks, the ECB can attempt to design its monetary policy measures and actions in a "neutral" manner or – with a view to the objectives set out in Art. 3 TEU – "specifically", that is in a non-neutral manner (*Walter* 2024; *Walter* 2023). This is outlined in the following, using regional aspects as an example for a sustainability goal besides the green goal. The reader may think about the greek problems after 2010. Of course, the analysis can be extended to further (e.g. social) sustainability goals which can be derived from Art. 3 TEU.

a) Outright Transactions

Concerning outright transactions (outright asset purchases), the following analysis of design-options – deviating from the usual discussion – assumes, that the ECB buys the assets, e. g. bonds, in bilateral transactions directly from banks and not "anonymously" on the (secondary) financial market. In this case, the ECB principally can buy the bonds in a neutral way with respect to the characteristics of the respective banks. For example, the ECB could buy a higher volume of bonds from a large bank A than from a small bank B. The ECB can also attempt to buy bonds in a regionally balanced structure. If, for example, region A is – economically and financially – stronger than region B, the ECB could buy more bonds emitted from agents in region A than emitted from agents in region B. In the case of corporate bonds, market neutrality could be applied, which could refer to market capitalisation. The ECB's purchases would then reflect the structure of the corresponding bond markets. If, for example, industries A and B have a comparable market capitalisation, the ECB could buy (e. g. from banks) a comparable volume of bonds emitted by companies of the respective industries.

In contrast, a specific design of the described outright transactions with a view to the objectives set out in Art. 3 TEU could, for example, include a regional or a green preference with respect to the bonds being purchased. The preference could relate to the quality of the bonds that the banks offer to the ECB for purchase or to the quality of the total of bonds that the banks hold in their own portfolio. The preference could also be based on the banks' loan portfolio or on the banks' performance with regard to climate-related disclosures. Concretely, the ECB can, when buying bonds, favour banks, that require borrowers to comply with sustainability standards, or banks, whose activities are in other ways in line with defined green or regional target indicators or banks, whose disclosure of climate-related information about its borrowers is in line with the EU-taxonomy regulation, over banks that perform less well in these respects (Table 1, field I B). Preference can be given by privileging well-performing banks over poorly performing banks or by excluding poorly performing banks from special refinancing operations (Table 1, field I C).

Concretely, the ECB could prefer to buy bonds held by banks in one region over bonds held by banks in another region. If, for example, region B is underdeveloped (e. g. if this region has a comparable population but a considerably lower economic strength compared to region A), the ECB could favour the purchase of bonds from regional bank B in line with European regional policy objectives. Or, with respect to climate aspects, bonds from green-producing companies could be favoured over bonds from non-green companies. To this end, the ECB must assess the bonds on offer with regard to the climate and nature risks they contain. The ECB tries to derive clear criteria for this with help of the EU taxonomy regulation. Alternatively, certain assets or asset classes could be excluded from refinancing operations if they do not fulfil certain climate-related criteria.

b) Credit Operations

In the field of credit operations (standing facilities are not analysed), the ECB could, neutrally, offer all banks the same opportunity for refinancing, e. g. by using a standardised rate on the main refinancing operations (key interest rate or base rate), by defining standardised quality requirements for the collateral to be submitted by the banks and by a standardisation of procedures and periods for the refinancing operations. The standard procedure known as the fixed rate tender (*Görgens/Ruckriegel/Seitz* 2013) ensures that with respect to the allotment each bank receives an identical quota of the respectively desired refinancing volume at an identical refinancing rate. On the other hand, the variable rate tender procedure is market-neutral, whereby the banks state the rate they are prepared to pay for central bank money in addition to the desired allotment amount (*Görgens/Ruckriegel/Seitz* 2013). In this case, especially banks with an urgent need for refinancing tend to receive the desired central bank money – possibly at a higher rate.

In contrast, a specific design (e. g. with regard to green or regional criteria) of credit operations could be to differentiate with respect to the refinancing rates, to the collateral framework, to refinancing periods and/or to allotment quotas (Table 1, field II A). Preference could be based on the quality of the bonds that the banks offer to the ECB as collateral, on the quality of bonds that the banks hold in their portfolio, on the banks' loan portfolio or on aspects of climate-related disclosures (Table 1, field II B). The ECB could give preference to banks whose portfolios meet defined standards, e. g. with respect to green or regional target indicators and/or whose disclosure behaviour is in line with EU-regulation over banks that perform worse in these contexts. Preferential treatment within credit operations can be achieved by privileging well-performing banks or by excluding poorly performing banks from special (longer-term) refinancing operations (Table 1, field II C).

Concretely, banks from certain regions or banks with a focus on financing "green" projects could be favoured with regard to the refinancing rate by offering them a lower rate. Or, special longer-term refinancing operations could be offered only to "well performing" banks: while the general level of the base rate is set with a view to price stability, the rate could in detail be differentiated in favour of banks that finance investments in green projects, for instance in the field of renewable energies and energy efficiency, and thus support the transformation towards climate neutrality. Incidentally, this would also reduce the risks of fossil fuel inflation (*Kriwolutzky/Volz* 2023).

The ECB already practises differentiation in the context of so-called targeted longer-term refinancing operations (TLTROs), where – so far – different criteria have been selected for the targeting. For example, at the beginning of the pandemic crisis, the ECB offered preferential refinancing rates to banks that realised a high volume of loans – a kind of volume discount to promote economic activity (*Neyer* 2020). The realisation of green TLTROs is also being discussed, for instance reduced refinancing rates for banks that prefer to finance green projects or whose lending contributes to climate protection (*van 't Klooster/van Tilburg* 2020; *Kriwolutzky/Volz* 2023), or for banks whose business models support decarbonisation by holding low-carbon-assets or by submitting them as collateral in the context of credit operations. The ECB can specify the requirements for assets which banks offer to the ECB as collateral. To take climate risks into account the ECB can completely exclude asset classes that are not sustainable from being used as collateral. The ECB can also differentiate the offered refinancing periods and the allotment quotas based on sustainability-criteria in favour of green banks. The Bank of Japan implemented a differenciation of allotment quotas in the 1980s, but the criteria were growth-related and not sustainability-related (*Werner* 2005). Moreover, the ECB can supply special low-interest credit facilities for banks whose disclosure of climate-related information about its borrowers is in line with the EU taxonomy regulation.

c) Minimum Reserve Policy

Regarding minimum reserve policy, a neutral design would be characterised by the ECB imposing identical minimum reserve requirements on all banks, i. e. imposing a uniform minimum reserve ratio in relation to the respective volume of customer deposits (possibly differentiated according to the type of deposits – e. g. between customer deposits in the narrow sense and debt securities with maturities up to two years), and imposing a uniform interest rate on minimum reserves.

In contrast, a non-neutral structure of minimum reserve policy would be characterised by a specific treatment of banks, e. g. according to the region of their main activity or to the (green or brown) structure of their portfolios, with regard to the minimum reserve ratio or to the interest rate on minimum reserves (Table 1, field III A). The specific treatment could relate to the (regional or green) structure of the respective bond or loan portfolios or to aspects of the respective climate-related disclosure (Table 1, field III B). The ECB could favour banks whose portfolios meet defined (e. g. regional or green) standards in terms of the minimum reserve ratio and/or the interest rate on minimum reserves over banks whose portfolios do not meet the respective standards (Table 1, field III C). For example, the minimum reserve ratio of regional banks in underdeveloped regions could be lowered specifically. The reserve requirements could also be staggered according to the climate risks and impacts associated with the respective banks activity (*Kriwolutzky*/*Volz* 2023; *van't Klooster* 2023), e.g. increased for banks which primarily hold non-green assets or reduced for banks which mainly hold green assets or reduced for banks which concentrate their lending activity on the financing of green projects.

The minimum reserve policy has a linking function: because banks are obliged to hold minimum reserves, they need central bank reserves. This guarantees the effectiveness of refinancing operations within the central bank's monetary policy. Nevertheless, the minimum reserve policy currently appears to be on the retreat. In 2012, the ECB lowered the reserve requirement from 2 % to 1 % of specific liabilities on their balance sheet. Recently, the FED even put the reserve requirement down to 0 %. The reason for this could be, that central banks want to induce a higher money multiplier and thus guarantee a high effectiveness of monetary policy concerning the overall money supply (*Fuders* 2024).

d) Options of Refinancing Operations and Minimum Reserve Policy: an Overview

The explanations show that the ECB has numerous options for differentiation in the context of refinancing operations and minimum reserve policy. This is shown in Table 1. When interpreting this table with respect to the multitude of options, it should be taken into account, that each of the instruments can multiply be realized. The ECB can, for instance, simultaneously realise several outright transaction programmes, each of which can be specified in a different way, and – similarily – can realise several different (e.g. longer term) credit operations and – furthermore – specify its minimum reserve policy simultaneously in different ways.

Table 1

Options for Differentiation of Monetary Policy Instruments with Respect to Commercial Banks

Instrument	Basis for Differentiation (A)	Criterion for Differentiation (B)	Type of Sanction (C)
I) Outright transactions	Asset purchase (new or repurchase)	1. Assets offered to ECB 2. Assets in balance sheet 3. Loan portfolio 4. Climate-related disclosure	1. Specific treatment 2. Selective exclusion
II) Credit operations	Base rate	1. Assets offered to ECB 2. Assets in balance sheet 3. Loan portfolio 4. Climate-related disclosure	1. Specific treatment 2. Selective exclusion
	Collateral framework	1. Assets offered to ECB 2. Assets in balance sheet 3. Loan portfolio 4. Climate-related disclosure	1. Specific treatment 2. Selective exclusion
	Refinancing period	1. Assets offered to ECB 2. Assets in balance sheet 3. Loan portfolio 4. Climate-related disclosure	1. Specific treatment 2. Selective exclusion
	Allotment quota	1. Assets offered to ECB 2. Assets in balance sheet 3. Loan portfolio 4. Climate-related disclosure	1. Specific treatment 2. Selective exclusion
III) Minimum reserve policy	Minimum reserve ratio	1. Assets in balance sheet 2. Loan portfolio 3. Climate-related disclosure	Specific treatment
	Interest on minimum reserves	1. Assets in balance sheet 2. Loan portfolio 3. Climate-related disclosure	Specific treatment

Source: Own work.

2. Evaluation of the Implementation of Non-neutral Monetary Policy by the ECB

So far, the ECB has implemented only some of the numerous options mentioned above. This will be evaluated in the following section.

a) Implementation of Green Monetary Policy

In the climate context, the ECB, so far, is ready (*ECB* 2021c) to "intensify its ongoing preparations [only] for actions in four areas of monetary policy operations: climate change-related disclosures, risk assessment (e.g. climate stress tests), the collateral framework and the corporate sector purchase programme." Other possible action is not mentioned. This "self-restriction", which also reflects in the road map of climate-political action (*ECB* 2021b), may be based on an internal evaluation of monetary policy instruments. From the ECB's perspective, several criteria are relevant when choosing special measures of monetary policy (*ECB* 2021c). Following the ECB, any measure should be in line with the mandate of the ESCB and with other legal considerations. It should not put constraints on the desired monetary policy stance. The effectiveness of the measure in supporting the EU's general economic policies should be considered. Any measure should also be assessed for its feasibility, risk efficiency and operational complexity. Feasibility, for example, is only given, if there are clear indicators to judge the effectiveness of monetary policy measures with respect to the (e.g. green) objectives.

With regard to green differentiation, the ECB, thus far, only realised a privileged treatment of green bonds over non-green bonds in the context of outright transactions and with regard to the collateral in the context of credit operations. There was no privileged treatment with respect to refinancing rates, e.g. with regard to banks that favour green loans to their customers. In this sense, there have been no green TLTROs so far.

The ECB justifies the waiver of green TLTROs with the difficulty of appropriately valuing the credit portfolio of banks (*ECB* 2021c): "The feasibility of such operations hinges on the availability of a proper definition of 'green lending'. In principle the definition of green lending could rely on the Commission's EU Taxonomy Regulation, but the taxonomy is not sufficiently prescriptive at present and banks do not collect the necessary information systematically". This argumentation is, however, weak, because ECB could, within a green TLTRO-programme, use one of the other criteria for differenciation listed in Tab. 1, for instance the criterion of green collateral. For instance, within such a programme, banks that submit green collateral could be privileged by lower refinancing rates compared to banks submitting non-green collateral. This design would avoid the difficulty of green lending mentioned by the ECB. In this context, the People's Bank of China introduced subsidised green refinancing for banks that use green bonds as collateral in 2016 (*Kriwoluzky*/*Volz* 2023). Against this backdrop, the ECB's rejection of green TLTROs is not well founded. However, the ECB relativises its rejection (*ECB* 2021c): "Given the essential role of TLTROs in supporting the economy and the need to ensure the most effective targeting, and in light of the need to overcome a number of hurdles, it seems *premature* to concretely envisage targeted green operations at present" (italics added by the author).

Green differentiation within the framework of the minimum reserve policy has not yet been considered by the ECB. So far, the minimum reserve policy has been neutral in the way, that all banks are subject to identical minimum reserves requirements (identical reserve ratios for customers deposits subject to minimum reserves and identical interest rates on the minimum reserve deposits).

A green minimum reserve policy could, however, reinforce the effect of a green refinancing policy. This is so because the minimum reserve policy has direct effects on all banks subject to minimum reserve requirements (in the Eurozone, this is around 4,000; *ECB* 2024), not just on banks participating in refinancing operations. Especially, a green design of the minimum reserve policy would also effect smaller banks that are relevant to small and medium-sized enterprises (SME). In this respect, green impulses of the ECB would have an additional impact on SME.

Thus, the ECB should consider measures towards a green minimum reserve policy. The staggering of minimum reserve requirements could, for instance, be based on the banks' asset portfolio (Table 1, field III B). The loan portfolio of banks does not need to be evaluated. Thus, there would be no problems with regard to "green lending". Therefore, ignoring minimum reserve policy in the climate policy action plan requires a separate justification by the ECB.

To summarise, when revising its climate policy action plan, the ECB should consider an instrumental expansion, e. g. by introducing specifically designed green TLTROs and a green minimum reserve policy.

b) Implementation of a Non-Neutral Monetary Policy in a Broader Sense

At present, there is a second – serious – shortcoming with respect to the ECB's implementation of a non-neutral monetary policy. So far, ECB only addresses the green or climate context, but no other objective mentioned in Art. 3 TEU, which could be relevant for the general economic policies in the Union. So, currently, ECB's monetary policy is not sustainable in a broader sense. Thus, the mandate of the ESCB is not fully respected at the moment. Here, however, the question arises as to how several aspects of sustainability, e. g. ecological, social and (regional) economic sustainability could simultaneously and without conflicts be achieved with help of a specific design of monetary policy.

Would it, for example, be possible to assign a green monetary policy action programme in the field of refinancing operations and – simultaneously – a minimum reserve policy with a view to regional economic sustainability? Could conflicts between green monetary policy and a monetary policy focussing on regional economic sustainability be avoided, and, moreover, possible conflicts between non-neutral monetary policy and price level stability? If the answer is yes, a multi-dimensional non-neutral monetary policy – as explained – would be required by the mandate of the ESCB.

IV. Two Proposals for a Non-neutral Monetary Policy in the Eurozone

In this section, two proposals for the design of refinancing operations and minimum reserve policy are presented, which could help to overcome possible conflicts and difficulties in implementing a broad sustainable monetary policy in line with the mandate of the ESCB.

1. Simultaneous Implementation of Several Monetary Policy Action Programmes

Interpreting the Tinbergen rule mentioned above, as many objectives can simultaneously be pursued by monetary policy without conflict as different monetary policy action programmes (measures) are launched. Table 1 illustrates numerous options available to the ECB for its refinancing operations and minimum reserve policy. On this basis, a simultaneous pursuit of several sustainability-relevant objectives of Art. 3 TEU seems possible without compromising on price stability. For example, green outright transactions could be realised in a non-inflationary volume while simultaneously regional objectives could be pursued within the framework of credit operations using as a basis a base rate which is adequate to fight inflation. At the same time, further objectives could be supported within the framework of minimum reserve policy. It would even be possible to pursue several objectives within one of the mentioned fields of monetary policy. For example: within the framework of credit operations, a green programme in favour of banks that submit green bonds as collateral could be accompanied by other programmes in favour of banks that concentrate their activities on economically weak regions. In this context, the design of the preferential treatment can be similar (e. g. a lower refinancing rate in both programmes) or different (e. g. also using longer refinancing periods, higher allocation quotas or preferential treatment within the collateral framework). Of course, aspects of feasibility have to be taken into account. For example, rather the bond portfolio of banks could be used as a basis or criterion for specific treatment of banks than the respective loan portfolio.

To summarise, the first proposal is that the ECB should simultaneously pursue several objectives in a "multi-dimensional" non-neutral monetary policy in accordance with its mandate set out in Art. 127.1 TFEU in connection with

Art. 3 TEU by simultaneously implementing several monetary policy action programmes, which are specified in a different way.

2. Using the Criterion "Balance Sheet Total" for Specific Treatment of Banks

Sustainability objectives can be addressed with a monetary policy that specifies its instruments according to the balance sheet total of the banks involved in monetary policy operations and in this context favours small banks over larger ones. The balance sheet total is a clear criterion. It can be easily determined by the ECB. A staggering with respect to the size of banks can therefore be easily implemented by the ECB. A monetary policy based on the balance sheet total of banks can be realised for outright transactions, for credit operations and within the minimum reserve policy (see Table 2). For an easy implementation, the ECB could simply divide all banks subject to minimum reserve requirements with respect to their balance sheet total into two groups ("large" and "small") and privilege the group of "small" banks with respect to the conditions of refinancing operations and/or with respect to the minimum reserve requirements. The groups could be reviewed on a quarterly basis and, if necessary, be redefined in order to take into account changes in the balance sheet totals of the banks subject to minimum reserve requirements.

A non-neutral monetary policy in favour of smaller banks can be justified with respect to the mandate of the ESCB, because such a policy can indirectly favour SMEs and/or the regional periphery, which is in line with European regional policy. To give an example: the list of around 4,000 banks subject to minimum reserve requirements includes around 1,100 Volksbanken and/or Raiffeisenbanken (from Germany and Austria), which is more than 25 % of all banks subject to minimum reserve requirements (*ECB* 2024). Volksbanken and Raiffeisenbanken are particularly committed to SMEs and to "their" regions (*BVRb* n. d.). They play a special role in peripheral, e. g. rural regions – not only as a credit institution, but also as a promoter of various regional and social activities. About the same applies to savings banks. According to the German Savings Banks Association, the Savings Banks Finance Group makes a valuable contribution to sustainable development in Germany and is committed to sustainable prosperity on a local level in a variety of ways in line with its public mandate (*DGSV* n. d.).

On average, savings banks and especially Volksbanken and Raiffeisenbanken are rather small (despite numerous recent mergers). For example, at the end of 2023, the 697 banks included in the Federal Association of German Cooperative Banks had an average balance sheet total of around EUR 1.7 billion (*BVRa* n. d.), while all the banks included in the Deutsche Bundesbank's banking statistics (however on a different statistical basis) had an average balance sheet total of around EUR 7.8 billion (*Deutsche Bundesbank* 2024, Table 1).

The example of Volksbanken and Raifeisenbanken illustrates that privileging small banks over large banks can mitigate regional and social polarisation – which would otherwise be favoured by the mentioned dynamics on the credit markets – and thus can be used to achieve some of the objectives mentioned in Art. 3 TEU. In addition, privileging smaller banks can raise the effectiveness of monetary policy by reducing the difference in size between banks. In this case, potential reserve-flows between banks in the context of transfer transactions could better be synchronised (higher clearing potential). This would reduce the reserve requirements of the banking sector as a whole and would thereby increase the money creation multiplier and thus the effectiveness of monetary policy (*Häring* 2016; *Huber* 2018).

A privileged treatment of smaller banks within monetary policy on the basis of the banks' balance sheet total is conceivable in many different ways. As part of outright transations, the ECB can purchase bonds preferentially or (in special programmes) exclusively from small banks (Table 2, part I). Within credit operations small banks can be privileged with respect to refinancing rates, to the requirements within the collateral framework, to the refinancing periods and/or to the allotment quotas – or by special programmes that are set up exclusively for small banks (Table 2, part II). Within minimum reserve policy, smaller banks can be privileged by lower minimum reserve ratios and/or higher interest rates on the respective minimum reserve deposits. (Table 2, part III).

Table 2

Differentiation of Monetary Policy Instruments by the Balance Sheet Total of Involved Banks

Instrument	**Basis for Differentiation (A)**	**Balance Sheet Total (B)**	**Type of Sanction (C)**
I) Outright transactions	Asset purchase (new or repurchase)	"small" or "large"	1. Specific treatment 2. Selective exclusion
II) Credit operations	Base rate	"small" or "large"	1. Specific treatment 2. Selective exclusion
	Collateral framework	"small" or "large"	1. Specific treatment 2. Selective exclusion
	Refinancing period	"small" or "large"	1. Specific treatment 2. Selective exclusion

Instrument	Basis for Differentiation (A)	Balance Sheet Total (B)	Type of Sanction (C)
	Allotment quota	"small" or "large"	1. Specific treatment 2. Selective exclusion
III) Minimum reserve policy	Minimum reserve ratio	"small" or "large"	Specific treatment
	Interest on minimum reserves	"small" or "large"	Specific treatment

Source: Own work.

With respect to minimum reserve policy, there is an alternative design-option for a policy that is specific with respect to the size of banks. The minimum reserve regulation does provide for a standardised allowance of EUR 100.000 in relation to the calculation of the minimum reserve base, which every bank has to deduct from its minimum reserve requirement (*Deutsche Bundesbank* n. d.). This especially is a benefit for smaller banks. At present, the allowance shall primarily help to cover the administrative costs associated with minimum reserve management (*Deutsche Bundesbank* n. d.) and is therefore not intended as a measure to favour smaller banks. But the allowance could be raised (e. g. to EUR 200.000 or even higher). If, simultaneously, the minimum reserve ratio is also raised (e. g. to 1.5 %), smaller banks would in effect be better off in relation to large banks.

If the size of banks is measured on the basis of the balance sheet total, the criterion of feasibility appears to be fulfilled. As mentioned, the balance sheet total is a clear criterion. The ECB has information on the size of the banks subject to minimum reserve requirements. So, implementation appears to be technically simple. Moreover, a size-specific monetary policy favouring small banks would be in line with the statute and the mandate of the ESCB and it could support competition in the banking sector. Conversely, there is no obvious reason why this proposal, namely to favour small banks over large banks within refinancing operations and in the context of minimum reserve requirements, should not be tested – perhaps gradually and tentatively.

A monetary policy which is specific with respect to the size of the banks involved can be implemented additionally to other programmes of a non-neutral monetary policy, e. g. additionally to programmes of a green monetary policy. In this context, it would for example be in line with the Tinbergen rule to simultaneously implement

- A green monetary policy, e.g. with regard to the disclosure performance of banks involved in outright transactions,
- A regionally orientated monetary policy, e.g. with regard to the regional structure of the bond portfolios of the banks involved in credit operations,
- A regionally and socially oriented monetary policy, e.g. with the help of differentiation according to the balance sheet total of the banks involved.

Moreover, all of this could – as explained above – be realised in an inflation-neutral manner if the fundamental decisions on the volume of monetary policy activity and on the basic level of the main refinancing rate follow the criterion of price stability.

To summarise: monetary policy has more options than is usually discussed. So, taking into account additional objectives set out in Art. 3 TEU which are relevant for the general economic policies in the Union does not necessarily "overburden" a monetary policy, which is in line with the mandate of the ESCB. On the contrary, it is possible to design a monetary policy which allows to steer effectively with respect to different objectives set out in Art. 3 TEU and which at the same time does not compromise on price stability.

V. Conclusion and Outlook

A non-neutral monetary policy towards sustainability is possible, but has been realised by the ECB only to a limited extent so far. In two respects, the ECB‘s roadmap of climate related actions is "incomplete" in terms of sustainability: firstly, not all instruments of monetary policy that are possible under the statute have been used so far in a specific "green" way. Secondly, further objectives of Art. 3 TEU, e.g. focussing also on aspects of regional and social economic sustainability have not been addressed so far. Against this backdrop, this article proposes options for a monetary policy that is sustainability-related in a multi-dimensional way. To this end, refinancing operations and minimum reserve policy should more than today be differentiated according to specific characteristics of the banks and financial assets involved and the differentiation should be implemented in more programmes than before, taking into account the Tinbergen rule to simultaneously secure price stability. Thereby, the intensity of differentiation could be chosen according to the degree of (non-)realisation of the respective sustainability-related objectives. So, firstly, the ECB‘s commitment to climate policy should be expanded by realising additional specific programmes of monetary policy. Additionally, refinancing operations and minimum reserve policy should also be designed in a size-specific manner privileging small banks – thereby also addressing non-ecological sustainability objectives of Art. 3 TEU.

Sustainability aspects affect monetary policy in many ways. Not all relevant aspects have been discussed in this article and so questions remain open. There is, for example, the aspect of (sound) public finances. Should monetary policy take into account the situation of public finances of individual member states? How is Art. 119 TFEU to be interpreted in this respect? Furthermore: should central banks privilege public development banks (e.g. KfW Bank in Germany) with special treatment? Within the Eurozone, also national central banks could do this on the basis of Art. 14.4 of the statute of ESCB (TFEU, Protocol No 4). How is this option to be evaluated with respect to sustainability? And: should additional monetary policy instruments be developed with respect to sustainability? According to Art. 20 TFEU, Protocol No 4, the ECB Governing Council "may decide, by a majority of two thirds of the votes cast, on the use of other instruments of monetary policy which it considers appropriate, subject to compliance with Art. 2 [TFEU, Protocol No 4 (which corresponds in principle to Art. 127 TFEU)]". Finally: to what extent is the planned introduction of a central bank digital currency, i.e. a digital euro, relevant with respect to sustainability? Having all this in mind, the relation between monetary policy and sustainability needs to be analysed in more detail in the future.

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