

VoxEU: Central banks and climate change

Central banks have been called on to contribute to fighting climate change. This column presents a framework for thinking about the issue and identifies some major trade-offs and choices, **writes Markus K Brunnermeier and Jean-Pierre Landau** from VoxEU



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Fighting climate change has become the major priority of public policy in a great number of countries, and central banks have been called on to contribute. Some have shown an inclination to internalise climate change in their policy objectives and frameworks. Others are more reluctant. In this column, we present a framework to think about the issue and identify some major trade-offs

and choices. An essential distinction must be introduced from the start between the two responsibilities that central banks undertake in most countries: the supervision, regulation, and oversight of financial institutions' activities; and the implementation of monetary policy. One can think of a spectrum of interventions on climate change, some of them uncontroversial, others more innovative or intrusive.

Internalising climate risks in financial supervision

This seems an obvious obligation. Climate should be a major part of financial risk assessments. Stress tests and, in the euro area, the Internal Capital Adequacy Assessment Process (ICAAP) should have a climate component. Climate scenarios should be conducted in parallel (or as complements) to macroeconomic scenarios, as the climate has an obvious impact on the valuation of long-term assets and liabilities. Climate sensitivity analyses should systematically be conducted and updated for the portfolios of insurance companies, institutional investors, and asset managers.

A subtle distinction must be introduced, however, between three categories:

- The risks stemming directly from climate events (for instance, mining, farming or some industrial activities may become impossible in some areas and existing assets must be depreciated accordingly)
- The future impact of existing climate policies that must be assessed and priced accordingly
- The impact of future climate policies that have not yet been decided. For instance, should a carbon tax (or some equivalent measure) be implemented, some oil reserves would become 'stranded' and exposures by financial intermediaries should record some impairment. It is economically logical that institutions be stress-tested against that possibility. It is also financially sound that institutions be asked to protect against it. However, it may be operationally awkward for supervisors to assess the probability of policies that have been enshrined in international agreements (the Paris Agreement, for instance) but not enacted by the legislator.

Interestingly there is a feedback effect. If private institutions provision for the impact of future climate policies, they will be more resilient when measures are taken. In turn, increased preparation in the private sector may make it easier and politically more feasible to adopt the necessary policies.

Using of prudential ratios (capital requirements) to direct financing towards sustainable investments

Most capital ratios under the Basel III regime are 'risk weighted' – they vary with the estimated riskiness of loans and assets held by banks. It would be relatively straightforward to expand the concept and definition of riskiness to take climate risks into account. Again, there is a gradation of possible regimes depending on the kind of risks that would be considered: existing and materialised climate risks or future possible climate risks; impairments resulting from existing policies of future possible policies.

Capital ratios could also be used in a more proactive way by applying favourable regimes to loans and investments deemed 'green' by supervisors. While operationally easy to implement, such regimes would confront central banks with a triple challenge:

- Green investments may be intrinsically riskier and would, per se, require higher capital buffers.
- How would the 'green' characterisation be defined and by whom? Are regulators equipped to make such a determination?
- Using prudential ratios to influence the allocation of credit would mark a shift toward more 'directed credit' policies. Those policies were abandoned in most advanced economies several decades ago but are practised in many emerging economies. Again, the question would arise as to whether central banks are equipped to implement such policies. The central banks might become subject to severe lobbying pressure from various interest groups.

None of these challenges is insurmountable, but they would need to be addressed ex ante and the proper institutional and governance arrangements put into place.

Creating and increasing incentives to 'green finance'

While the concept of green finance is widely utilised, it remains largely undefined in terms of instruments and legislation. At this stage, in addition to specific regulatory incentives, central banks could pursue two general and distinct objectives:

- Encourage the development of long-term project finance as most of the difficulties attached to financing the energy transitions are common to all long-term risky projects
- Push governments and parliaments to take clear and predictable measures. Uncertainty on future policies – more than the lack of financing – is the main factor inhibiting investment in climate change. Once those uncertainties are removed, investors will be able to take full advantage of existing low interest rates and easy financial conditions.

It is obvious that the link between climate change and monetary policy is looser and less well-defined than with financial stability and supervision. One major difficulty is the difference in horizons. The conventional wisdom on monetary policy is that it has no impact on long-term growth; its influence is mostly felt on a 1.5 to 2.5 years horizon. By contrast, climate change is all about the long term; effects and policies materialise and matter over several decades.

Impact of climate risk on macroeconomy

This being said, central banks may want to take several climate change-related aspects into account when designing and implementing monetary policies:

- First, they should incorporate climate risks in their assessment of potential growth and output as well as the natural equilibrium interest rate (r^*).
- Second, even in the short run, the climate can have an impact if it leads to an increased frequency of extreme weather events. Those events are 'negative supply shocks' with inverse effects on output and prices. They very much complicate the conduct of monetary policy. Some small and medium-sized emerging economies may be especially exposed and adjust their policy frameworks accordingly.

Monetary instruments

The big question, however, is whether central banks can use their monetary instruments to actively promote the fight against climate change (Honohan 2019). Over the last decade, central

banks have significantly expanded their balance sheets, often by a factor of five or ten. In many countries, those balance sheets are now commensurate to the size of the national economy. With such an imprint on the economy and financial markets, central banks could take a more proactive approach to financing the climate transition.

Two possibilities come to mind, both without significant changes to the current operational framework:

- Reorient their asset purchases towards 'green' securities
- Modulate haircuts applied to different kinds of collateral used in refinancing operations, thus creating an incentive to detain some and offload others.

Some reflections in light of Musgrave's categorisation

Should central banks take that route? This may be the most sensitive and difficult question. In this column, we simply present some reflections – first at a general level, and then applied to particular central banks.

Generally speaking, it is useful to refer to the classical Musgrave distinction between the three functions of public economic policies: allocation (of resources), redistribution (of incomes) and stabilisation (Musgrave 1939).

In countries in which central banks are subordinate to the government and do not enjoy any independence, a clear assignment of the various policy functions is less relevant. This is especially true if the government-directed credit is part of the economic model, as in the case of China for example.

In democratic societies, decisions on allocating resources and redistributing incomes are taken by elected bodies. Obviously, policies relating to climate change belong to that category. Independent central banks are non-elected 'agents' of the society; they have a well-specified mandate to stabilise the economy. It can be argued that central banks would be going beyond their mandate if they were to tweak their instruments of monetary policy to allocate resources and direct credit. This seems to be the position taken by the Federal Reserve. Chairman Powell stated recently that "[c]limate change is an important issue but not principally for the Fed".

The situation may be more complex for the ECB. Compared to the US Federal Reserve, its mandate is both more hierarchical – with price stability as a priority objective – and more complex. The Treaty states that "... without prejudice to the objective of price stability", the Euro system shall also "support the general economic policies in the Union with a view to contributing to the achievement of the objectives of the Union". These include "full employment" and "balanced economic growth".

To the extent that price stability is not compromised, and fighting climate change is a major (recently reaffirmed and emphasised) priority of the EU, the question arises as to whether the ECB can use some of its available instruments to also pursue a climate change objective. This is certainly a point made by many climate activists.

However, this immediately raises further questions. Governments in various countries pursue many policies. Is it legitimate for the central bank to pick and freely select its preferred secondary objective? Or should it defer to elected bodies if the policy aims at allocating public resources, as seems normal in a representative democracy.

The trade-off is real and difficult. If the central bank were to assess the situation itself and contemplate actions, its legitimacy would be challenged (Tucker 2018). In addition, it would expose itself to various political pressures. On the other hand, if it requests some formal guidance by elected bodies (e.g. the parliament), it risks fuelling the perception that it has lost its independence. There might be subtle ways and procedures to navigate between those risks, but the dangers are real and would justify a great caution. Under all circumstances, the central bank should keep the absolute discretion to interrupt any action or programme if its first-priority objective – price stability – were to be compromised.

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