

Yves Mersch: Climate change and central banking

Speech by Mr Yves Mersch, Member of the Executive Board of the European Central Bank, at the Workshop discussion "Sustainability is becoming mainstream", Frankfurt am Main, 27 November 2018.

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"Grey, dear friend, is all theory,

*And green the golden tree of life."*¹

Goethe, J. W. (1808), Faust. Eine Tragödie.

This quote from "Faust" by Frankfurt-born Johann W. Goethe is already 210 years old. But it aptly sums up the current public debate on "green finance" – financial instruments that support solutions for climate change.

Indeed, governments, companies, banks and public bodies have been coming under mounting pressure from interested sections of the public to transform their strategies and make them more climate-friendly, a process sometimes disrespectfully referred to as "green washing".

So it is hardly surprising that loud demands are also being made for central banks to contribute towards solving the identified problems.

By no means do I want to be the "spirit, ever, that denies".² But in this concrete instance, the situation is clear: finding – or financing – the solution to the problems of climate change appears, at first glance, somewhat remote from the primary mandate of a central bank.

But let's turn to the present to explain this verdict in more detail.

Macroeconomic effects

It is not enough to link to newspaper reports, nor to quote a World Economic Forum report, that has ranked climate risks as both high-impact and high-likelihood events³ in order to create a new mandate or objective for a central bank.⁴

Is there convincing evidence for us to adjust our monetary policy strategy because increased risks of more frequent and more devastating future climatic events could influence economic dynamics in the medium term, the monetary policy horizon? The non-quantified increased probability and causality in such events may only hold implications for short-term developments, which do not influence the conduct of monetary policy.

One can also establish the general assumption that climate change may have more longer-lasting impacts on potential output and relative prices, but these will also have less bearing on the conduct of policy.

The economic literature on the impacts of climatic shocks is relatively new and less developed than for other types of economic shock. Does it contain useful insights? Conclusions that while the short-term impact on output is generally negative,⁵ the overall impact in the medium and longer term is less certain,⁶ suggest that climatic events are hardly relevant for monetary policy as the monetary policy impacts are similar to those associated with other major shocks like wars or disruptive technological innovation.

Climate events can affect both supply and demand in the economy. Destruction in the near term can affect production and weigh on aggregate wealth over the longer term. Was the cold weather

at the start of this year solely responsible for the temporary fall in investment and consumption across the northern hemisphere? But the rebuild period can also lead to a demand surge that puts upward pressure on activity. Effective institutions and legal frameworks,⁷ including solid building codes, the quality of governments and access to credit and insurance,⁸

can all influence the ultimate impact, while even slight differences in geographic location can play a significant role.

Overall, the impact of climatic disasters on inflation in advanced economies appears relatively limited. While storms and droughts may increase food prices in the near term, the effect is short-lived and is typically reversed within a year. Moreover, inflation in other parts of the index can fall, offsetting the overall impact.⁹

Monetary policy certainly has sufficient tools to stabilise inflation over the medium term, i.e. a few years. But it may bring a greater degree of short-term volatility in output and inflation.

The relatively localised impact of climatic events or other shocks might have implications for fiscal policy, with revenues typically falling and spending rising.¹⁰ This can worsen debt sustainability.¹¹ But making strong assumptions based on the empirical evidence so far, particularly given the uncertainty, would be hazardous.

Yet the ability of fiscal policy to mitigate the impact plays an important role in the region's long-run recovery. It would be prudent policy to advise countries to prepare themselves for a potential future increase in climatic events by reducing public sector debt and creating greater fiscal space. But are other risks like demographic change not better identified? How are they related to climate change? And how should a central bank with a limited geographical remit respond to events affecting the planet as a whole? Where does endogeneity end and exogeneity begin?

If understanding the effects of climate change – which occurs over countless decades or centuries – on economic developments over a horizon of three to five years is complex, anticipating its long-term effects on monetary policy is harder still.

Some observers anticipate reductions in the productive capacity of the real economy.¹² Firms shifting production because higher temperatures or rising sea levels render their current locations uninhabitable could represent a significant industrial change. But simplistic assumptions do not reflect the reality of multiple equilibria. Each change also creates opportunities and unleashes creative thinking. Will productivity growth suffer if firms divert a greater share of their investment towards repair and replacement of existing capital rather than towards research and development? Should this capital allocation be in public or private hands?

One can accumulate a large number of one-sided assumptions and conclude that these would together depress the trend growth rate of the economy. And weak long-term growth expectations could in turn lower the natural rate of interest, pushing down the rate at which monetary policy is accommodative. We should remain open to all information and assumptions but also not underestimate the uncertainty of our knowledge.

Looking at inflation, the debate tends to centre on the effects of energy price inflation on the overall index, although other prices may well be affected by climate change too. The EU reference scenario of 2016¹³ suggests that household electricity prices will rise over the coming decades. Others have suggested that the low marginal cost of renewable energy could lead to falling energy prices in the longer term, with lower volatility than at present.

None of these relative price changes have impeded the ECB's ability to deliver on its price stability mandate. Nor is it reasonable to assume that changes in relative energy prices – in either direction – will do so in the future. Credible monetary policy, conducted by an independent

central bank, anchors overall inflation expectations. The bigger threat to price stability over the long run does not lie in relative price changes, but rather in a loss of independence by central banks following a situation in which they have ventured far into a political agenda with distributional consequences.

Financial stability

Let me now look at the channels through which climate change can impair financial stability. The work done by the Financial Stability Board's Taskforce on Climate Related Financial Disclosures, the European Systemic Risk Board and various central banks within the Eurosystem and elsewhere endeavours to identify potential risks and vulnerabilities.

The analysis identifies three principal sources of risk: first, the physical risk from exposure to climatic events; second, the sharp adjustments in asset prices arising from discretionary policy interventions; and third, investors being so caught up in the euphoria over "green" financial assets that they fail to adequately price in their risks. The absence of any agreed definition or standard about what is "green" and what is "sustainable" is however the biggest shortcoming so far.

The first risk mainly falls on insurers, who need to continuously monitor and assess risks to ensure capital adequacy. The ECB is, however, explicitly excluded from supervising insurance firms under the Treaty on the Functioning of the European Union. The banking sector may also be affected, to the extent that climatic events affect the physical collateral underpinning lending. Where individual banks have loan portfolios concentrated in particular geographic locations, the risk of failure is increased. Moreover, the overall economic impact of that failure could be magnified by any remaining interlinkages between banks and sovereigns.

Transition risk occurs because the path to a low carbon environment is not smooth. City-wide bans on diesel cars and the fallout from Dieselgate have driven down car makers' equity prices while also reducing the prices for second-hand diesel cars, detracting from their collateral value. In this case we need to assess social responses such as the recent street protests in France. Third-quarter GDP growth in Germany was negative following the sharp slump in production as car makers adapted to new emission tests. While this episode appears to be short-lived, it illustrates the impact that regulation can have on activity and asset values.

Third, undervaluation of risks in new green financial products could lead to price bubbles. I call this channel the Ponzi risk of green finance.¹⁴ We never know exactly where – but the next bitcoin mania is always lurking somewhere around the corner. Experience has taught us that you can only properly identify an asset price bubble once it has burst. And certainly a central bank should not try to prick an inflating speculative bubble with the blunt sword of monetary policy – the collateral damage to the economy and inflation could be too severe. By the same token, central banks must not contribute to inflating such a bubble.

Mitigating risks through green financing

But combating the potential economic disruption from climate change goes beyond reacting to events once they occur. Taking steps to reduce carbon emissions and investing in infrastructure can help limit their future impact.

Economic theory points to a role for public policy to intervene to correct market failure in cases where the private sector does not fully take into account the social cost of its activities. A carbon tax incentivises the private sector to find efficient ways of reducing pollution.¹⁵ However, the issue of how to distribute the burden associated with this incentive is socially divisive.

From a socially optimal perspective, green investments may also be underfinanced if market participants make investment decisions based on excessively short horizons. Moreover, scale,

liquidity and reliable benchmarks can considerably improve market functioning. Public sector intervention at the creation of such markets can provide the right framework to help kick start private-sector involvement.

The European Investment Bank issued the world's first green bonds in 2007, listed at the Luxembourg stock exchange. Further issuance has provided volume to the market. Today, more than 160 green bonds list on the LuxSE. Certification and incentives are also in place, but the issue of international recognition is still unresolved.

As a AAA-rated issuer, the EIB helps provide a benchmark for calculating yield curves and spreads in the green bond market. The European Commission's work on standardised definitions, classifications and reporting requirements should help increase transparency, discourage "green-washing" and improve market pricing. These initiatives now appear to be bearing fruit, with the private sector issuing more green bonds in recent years.

But while there may be a role for such public sector initiatives at the European level, the ECB's narrow mandate curtails its ability to contribute – a fact that, I think, is not always well understood by our critics on the subject. There are two ways in which some people say that we could contribute: first, through our asset purchase programme (APP) and second, through our role as banking supervisors.

The Treaty has granted us independence in choosing the best monetary policy instruments to use in fulfilling our mandate for price stability. But that independence is not a *carte blanche* to act arbitrarily. Our use of monetary policy tools needs to be *necessary, suitable and proportionate* to achieving our aim, while respecting the principles of an open market economy with free competition.¹⁶ Going beyond these strict conditions would erode our legitimacy, which could in turn threaten our future independence and reduce our ability to achieve our mandate over the long term.

So where do green bonds fit into the APP? Purchases and reinvestments under the APP are temporary and are undertaken to preserve price stability. As such, purchases have to be calibrated to achieve the maximum impact on output and inflation, which means purchasing bonds issued by a wide range of economic sectors without distorting the relative asset prices.

Carbon-intensive sectors accounted for nearly half of the bonds eligible for the corporate sector purchase programme (CSPP) at its inception. Excluding these bonds would have limited the CSPP's coverage, making it less effective. In other words, the exclusion of these sectors would limit the tool's suitability for its primary purpose of ensuring price stability.

Moreover, focusing purchases on green bonds would run counter to the requirement to respect the workings of an open market economy and be tantamount to industrial policy. The APP is a tool for macroeconomic stabilisation, not for microeconomic reallocation. Deviating from market neutrality and interfering with economic policy risks exposing the ECB to litigation. It is not up to the central bank but to elected governments to decide which industry is to be closed and when. As central bankers, we have to respect and implement legitimate decisions in this context. And the effectiveness of monetary policy has been bolstered by abstaining from normative judgments on the morality of markets and industries.

Of course, under the principle of market neutrality, we have also purchased green bonds. We currently hold around 24% of eligible publicly-issued green bonds and around 20% of private sector green bonds. In both cases, the proportion is in line with our share of holdings in the total CSPP-eligible universe.

Beyond our primary mandate for price stability, it is worth remembering that we are not regulators, neither for financial markets nor for banks. The ECB carries out banking supervision within the Single Supervisory Mechanism (SSM) under the Capital Requirements Regulation and

Directive, adopted by the Council of the EU and the European Parliament, with further regulations set by the European Banking Authority. We are not free to vary the capital requirements of supervised banks to take into account their climate risks, or to encourage climate finance. Indeed, when ECB Banking Supervision, acting within its supervisory mandate, issued guidance on non-performing loans earlier this year, this generated tensions with regulators, who felt the guidance strayed into the territory of legislation. But we are ready to bring in our experience if so requested, in particular if it were suggested to strengthen or broaden disclosure obligations, for example.

Nonetheless, climate risks have been identified in ECB Banking Supervision's risk assessment for 2019 and will be among the topics covered in the qualitative discussions held with banks on an individual basis.

The ECB will continue to carry out our democratically delegated functions as set out in the Treaty. Should a greater groundswell of support for environmental action cause bank regulators to modify the regulatory framework under which the SSM operates, supervisors must of course adjust their actions and implement the legal requirements accordingly.

Conclusion

Let me conclude.

Climate change poses the risk of considerable social costs and economic disruption. The challenges of climate change are social issues. The analysis and choice of possible solutions, including suitable instruments and their financing, require rigorous political debate. And no matter which path a society takes, the potential changes can have serious effects on sectors, regions, the distribution of income and wealth, and generations over time. Economically, there will be relative winners and losers. It is therefore the responsibility of elected representatives to decide on the best solutions.

Central banks are explicitly excluded from such political debates. In view of the central banks' almost limitless financial power, politicians would come under too much temptation to use monetary policy to achieve short-term political goals, a situation that could undermine the task of preserving the purchasing power of money. That is why, in most jurisdictions, monetary policy has been transferred to technocrats who are independent of politics and are bound to fulfil a strict and unambiguous mandate to guarantee price stability. In the case of the ECB, this "de-politicisation" has constitutional status.

At the same time, even an independent central bank does not operate in a vacuum. Technological progress, innovations, geopolitical tensions and, of course, regulatory requirements by legislators influence the environment in which monetary policy operates.

However, monitoring and analysing the extent to which climate change or other shocks may affect the transmission of monetary policy, the economic cycle, the soundness of individual banks and financial stability as a whole, and how they interact, is part of our forward-looking approach.

¹ Goethe, J. W. (1808), *Faust. Eine Tragödie*.

² Goethe (1808), *ibid.*

³ World Economic Forum Global risks report 2018.

⁴ Stern report: unionsforenergydemocracy.org/wp-content/uploads/2015/08/sternreview_report_complete.pdf

⁵ Noy, I (2009), "The macroeconomic consequences of disasters", *Journal of Development Economics*, 88(2): 221–231.

- ⁶ Strulik, H & T Trimborn (2018), "[Natural disasters and economic performance](#)", *Environmental and Resource Economics*, forthcoming .
- ⁷ Noy (2009), *op cit*.
- ⁸ von Peter, G & von Dahlen, S & S Saxena (2012), "Unmitigated disasters? New evidence on the macroeconomic cost of natural catastrophes", *BIS Working Papers* 394, Bank for International Settlements.
- ⁹ Parker, M (2018), "The impact of disasters on inflation", *Economics of Disasters and Climate Change*, 2(1): 21–48.
- ¹⁰ Noy, I & ANualsri (2011), "Fiscal storms: public spending and revenues in the aftermath of natural disasters", *Environment and Development Economics*, 16(01): 113–128.
- ¹¹ Klomp, J (2017), "Flooded with debt", *Journal of International Money and Finance*, 73(PA): 93–103.
- ¹² E.g. McKibbin, W & Morris, A & Panton, A & P Wilcoxon (2017), "Climate change and monetary policy. Dealing with disruption" *CAMA Working Papers 2017–77*, Centre for Applied Macroeconomic Analysis, The Australian National University.
- ¹³ EU reference scenario 2016: energy, transport and GHG emissions trends to 2050, Publications Office of the European Union, Luxembourg.
- ¹⁴ A Ponzi scheme is an investment scam that promises high returns with low risk for investors. It generates profits for early investors by attracting new ones. However, at some point there won't be enough money and no new investors, and the bubble bursts.
- ¹⁵ Nordhaus, W (1993), "Rolling the 'DICE': an optimal transition path for controlling greenhouse gases", *Resource and Energy Economics*, 15(1): 27–50.
- ¹⁶ See Mersch, Y. (2016), "Monetary policy in the euro area: scope, principles and limits", Speech by Yves Mersch, Member of the Executive Board of the ECB, at the Natixis Meeting of Chief Economists, Paris, 23 June.