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Towards a Green Eurozone: ECB Climate Risk Stress Test and Monetary Policy Changes

Gerrit von Zedlitz-Neukirch: Climate change is a threat for financial stability and price stability. An overview of the latest actions by the European Central Bank (ECB) to better assess and incorporate climate risks



Risk management is at the core of the business model of banks. However, climate change creates new uncertainties which may increase financial risks and thus threaten the viability of banks (see ECB a, McKinsey Global Institute and BCBS) as well as financial stability (see Battiston et al., ESRB and Bolton et al.). Counterparties of banks may be exposed to higher financial risks either because operating in regions most affected by climate change or because of operating in carbon-intensive industries.

Those physical and transition risks affect the financial performance and wealth of counterparties and may impact credit and market risk parameters of banks. Moreover, climate change may increase systemic risk due to its system-wide implications.

ECB climate stress test

To examine the impact of climate risks on eurozone banks, the ECB conducted a climate stress test in March 2022 (see ECB b). Similar to traditional stress tests, it assesses the impact of climate risks in adverse scenarios on their financial performance and thus their viability. But scenarios in climate stress tests primarily depict adverse climatic rather than economic conditions. Also, they tend to cover a much longer time horizon. After several national bank supervisors had conducted climate stress tests in the past, this was the first eurozone-wide bottom-up climate stress test.

The ECB requested data from all 104 supervised large eurozone banks. The ECB then selected 41 of these banks to conduct the stress test with. In July, the results were published – unlike traditional stress tests – on an aggregate basis rather than at the bank level. Moreover, the climate stress test results have no direct impact on the capital of banks. It was rather intended as a learning exercise for both banks and regulators. However, the results will feed into the annual supervisory review and presumably affect other future regulatory interventions of the ECB (see: [Presentation: 2022 Climate stress test results](#)).

Testing for physical and transition risks

The ECB 2022 climate stress test consisted of three modules: a questionnaire on internal climate stress testing (Module 1), a peer benchmarking of the impact of climate risks on bank revenues as well as the extent of their financed emissions (Module 2), and the stress test itself (Module 3). The latter used climate stress scenarios to test the impact of both physical and transition risks on the exposure of banks, in particular related to credit risk.

First, both short-term and long-term scenarios were used to examine the impact of transition risk on eurozone banks' global exposures. The short-term adverse scenario mainly assumes a sharp increase in the carbon price over the next three years, which is expected to affect banks' credit risk parameters. The long-term adverse scenarios describe a delayed or no transition to a net-zero economy over a 30-year time horizon. These scenarios are based on standard scenarios developed by the Central Banks and Supervisors Network for Greening the Financial System (NGFS). Second, the impact of physical risks on banks' exposures in EU countries was examined by employing two short-term scenarios: a heat wave as well as major floods over a one-year time horizon in Europe.

ECB: Banks need to further improve their climate risk management capabilities

The results of the stress test revealed that credit and market losses under the short-term disorderly transition and the two physical risk scenarios amounted to 70 billion euros for the 41 tested banks. A fast green transition caused lower losses than a delayed or no transition. Banks with exposures to sectors with high carbon intensity had the highest losses. Also, banks were able to mitigate negative effects by adjusting their lending behavior in the long-term transition scenarios. Physical risk had a heterogeneous impact on eurozone banks. The effects seemed to depend on the industry and geographical location of the banks' counterparties (followed the internal one-pager on the results: [Banks must sharpen their focus on climate risk, ECB supervisory stress test shows](#)).

However, the ECB also pointed out that these projected losses are likely understated. For example, the scenarios only model adverse climatic conditions. The impact of these conditions on the real economy was only considered to a limited extent. Moreover, the climate data availability and modeling approaches of banks are still at an early stage. Banks appeared to be largely unable to differentiate climate risks as they responded similarly despite different climate scenarios. The ECB concluded that most banks seem to be "[...] at the start of a long journey. Banks have made some progress in incorporating climate risk stress testing frameworks, but there's still plenty of room for improvement" ([FAQs for the 2022 climate risk stress test](#)).

These findings are also consistent with the results of the other two modules. The results of the questionnaire (Module 1) showed that 60 percent of the 104 banks do not yet have an internal framework for internal climate stress testing in place. Furthermore, most banks do not incorporate climate risks in their internal credit risk models. For instance, only 20 percent of the banks consider climate risks when they grant credits. The results of the peer benchmarking (Module 2) revealed that almost two-thirds of banks' revenues from non-financial corporate counterparties stem from carbon-intensive industries. Similarly, banks often only relied on proxies to estimate their exposures (followed the internal one-pager on the results: [Banks must sharpen their focus on climate risk, ECB supervisory stress test shows](#)). Therefore, reliable data is key for properly accounting for climate risks in the first place. The ECB 2022 climate stress test may have accelerated this development (see: ["Klima-Stresstest der EZB: Milde Prüfung für die Banken"](#)).

Adapting monetary policy operations to climate risks

At the same time, climate change and its consequences may also threaten price stability and the effectiveness of central bank monetary policy measures to stabilize prices. For example, bank losses due to physical hazards or valueless "brown" assets such as gas reserves on the balance sheets of banks may limit their lending capacity. This may, in turn, affect the transmission of monetary policy measures to address price instability (see: ["Central banks must do their part in fighting global warming"](#)). Therefore, in addition to banking supervision, the ECB announced in the same week that it would also incorporate climate risks into its monetary policy.

Four areas of changes in ECB monetary policy operations

The ECB announced changes in four areas: the corporate bond holdings, the collateral framework, the climate-related disclosure requirements for collateral, and the internal and external risk assessment and management.

Starting in October 2022, the Eurosystem plans to increase the share of assets issued by companies with a better climate performance to decarbonize its corporate bond holdings. Then, starting before the end of 2024, the Eurosystem plans to limit the share of assets pledged as collateral by entities with high carbon footprints. Ultimately, it plans to accept as collateral only those assets and credit claims of companies that comply with the new Corporate Sustainability Reporting Directive. This new directive substantially expands mandatory reporting requirements for large companies on sustainability topics. It is expected to be fully applicable by 2026. Finally, the ECB is urging rating agencies to be more transparent about how they consider climate risks. In addition, national central banks committed to common rules for the inclusion of climate risks in their internal credit assessment systems.

Observers: Unprecedented shifts in monetary policy

According to observers, these changes in monetary policy represent unprecedented shifts in monetary policy (see: ["ECB announces major green shift in corporate bond-buying"](#)). In an interview with Bloomberg, Myriam Azzouz and Cédric Merle, two analysts at a French investment bank, suggest that these changes may boost climate risk transparency and corporate climate mitigation efforts (see: ["ECB Climate Policies to Change Firms' Behavior, Says Natixis"](#)).

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