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Climate Transition Challenges: Exploring Credit Portfolio Misalignment in European Banks

Simona Galletta

Context and Importance of the Issue

European banks play a crucial role in financing the transition toward a low-carbon economy. However, despite regulatory pressures, most banks' credit portfolios remain misaligned with climate objectives. Recent ECB analyses reveal that 90% of significant European banks are misaligned, exposing the sector to transition risks, i.e.: losses stemming from policy, technological, or market shifts during decarbonization. This misalignment hinders the EU's path toward carbon neutrality by 2050 and signals the existence of systemic vulnerabilities in green finance.
The paper explores why banks remain misaligned, distinguishing between endogenous factors (bank strategy) and exogenous structural factors (country sustainability and industry composition).

Methodology and Key Findings

The study employs a panel dataset of 16,428 syndicated loans (2015–2023) involving European banks, distinguishing "green" financing based on its destination or the sustainability criteria of the beneficiaries. Econometric approach consists of logistic regressions with fixed effects; robustness checks using CO_2/GDP and lagged dependent variables (GREENSHARE). Dynamic models show path dependence past green lending shapes future alignment.
Key findings include:

- The Utilities sector shows the highest probability of green lending, confirming that industry-specific characteristics influence portfolio

alignment (Intergovernmental Panel on Climate Change, 2014; Green & Reyes, 2023).

- Carbon-intensive industries (Oil, Gas & Metals; Construction; Auto & Machinery) remain substantially less aligned. The positive relationship between sustainability and credit access strengthened over time, likely due to evolving regulatory and market pressures post-Paris Agreement.
- A country's environmental performance (measured by GHG emissions per GDP) strongly predicts green lending.
- This link is significant only within EU countries, consistent with institutional and legitimacy theory (Delmas & Toffel, 2004; Suchman, 1995).

Policy Implications

The results indicate that banks' alignment capacity depends largely on the economic and environmental context in which they operate.
Uniform prudential requirements (e.g., green capital reserves) risk penalizing institutions in more carbon-intensive economies (Financial Stability Institute, 2023).
Therefore, the main cause of portfolio misalignment does not lie primarily in incorrect risk assessment or insufficient integration of ESG criteria (Weber et al., 2008; Basel Committee, 2023), but in the industrial composition and sustainability path of national economies.

Recommendations

Foster corporate green innovation

- Public incentives and R&D support for business model innovation in carbon-intensive sectors (European Commission, 2019).
- Aligns with evidence that banks' green lending follows firms' sustainability performance (Birindelli et al., 2022).

Enhance EU taxonomy and ESG disclosure

- Expand the EU Taxonomy and make sustainability-related disclosures more consistent and comparable (Basel Committee on Banking Supervision, 2023).

Adopt flexible macroprudential regulation

- Use tools such as sectoral systemic risk buffers and concentration thresholds (European Systemic Risk Board, 2022) to account for national structural differences.

Encourage cross-border green lending

- Incentivize banks to diversify exposures toward more sustainable economies, reducing overall transition risk (Benincasa, 2021; Bruno & Lombini, 2023).

Implementation and Evaluation

The implementation of the proposed policies requires a coordinated approach between supervisory authorities, European institutions, and the banking system. First, specific transition risk indicators need to be integrated into the supervisory processes of the ECB and the EBA in order to distinguish the structural component from the behavioral component of portfolio misalignment. At the same time, the creation of a European Green Transition Fund could support the sectors most exposed to the challenges of decarbonization, promoting innovation in business models and encouraging industrial reconversion.

Conclusion

The study demonstrates that European banks' portfolio misalignment is largely a symptom of structural economic inertia rather than managerial negligence. Banks operating in less sustainable countries and carbon-intensive sectors face external constraints that limit their capacity to meet green transition objectives. Effective policy action must therefore go beyond financial regulation, addressing industrial transformation, institutional incentives, and macroprudential flexibility. Only by coupling regulatory alignment with real-economy transformation can Europe close the gap between financial practices and its net-zero 2050 vision (Fichera et al., 2025).

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