

Leveraging the Prudential Toolkit for Effectively Managing Stranding Risks

A focus on the European Banking Industry

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EXECUTIVE SUMMARY

As the European economy decarbonizes, economic assets across sectors are at risk of stranding or repricing from transition pressures. Yet private financial institutions, particularly banks, often narrowly focus on fossil fuel credit losses using historical data, **underestimating broader ‘whole of economy’ stranding risks.**¹ Risk mitigation in the form of **prudential capital buffers and loss provisions are insufficient** to absorb these increasing, yet underestimated stranding losses. The prudential supervisory toolkit must effectively correct the mispricing of transition risks while maintaining financial stability as assets devalue.

Proactively managing stranding risks would help mitigate economic disruptions from a disorderly transition, reduce banks’ vulnerability to future shocks, and reinforce resilience and financial stability. Timely transition finance is essential to help retire, retrofit, and transform emission-intensive assets before they face sudden stranding.

By adopting a proactive precautionary approach,² supervisors can enhance banks’ capitalisations to absorb stranding risks effectively, safeguard financial stability (by reducing carbon build-up), and finance the transition needs of the European economy. **The European Banking Authority (EBA), through its upcoming guidelines, should mobilise banks to integrate stranding risk considerations** within their broader transition risk frameworks and practices.

The EBA should enhance key microprudential tools such as:

- **Prudential Transition Plans:** Assess risk exposures to vulnerable firms with quantum and direction of credit flows toward transitional activities.
- **Supervisory Review and Evaluation Process (SREP):** Holistically integrate asset stranding risks with bank-specific outcomes.

- **Expected Credit Losses (ECL):** Account for transition risks to better absorb future uncertain stranding losses.
- **Non-Performing Exposures (NPE) and Collateral Valuation:** Reflect future repricing effects on energy-inefficient real estate assets, impacting credit and market portfolios.
- **Fair Value Adjustments (or AVAs):** Calibrate market instrument valuations with credible, forward-looking parameters to address transition risk mispricing.

But the systemic risk consequences of transition shocks, **necessitate a macroprudential response.** Some useful tools include:

- **Systemic Risk Buffer (SyRB):** Flexibility to be applied generally, sectorally and specifically to banks to help proactively finance emission reductions
- **Dynamic provisioning:** Counter the procyclicality of loss provisions, protecting banks’ capital and lending capabilities during economic shocks.
- **Other macroprudential tools:** Appropriate tools such as carbon-related concentration limits and system-wide stress tests to better identify and limit high-risk exposures

This brief policy paper attempts to explore some of the existing tools in the supervisory toolkit that could be leveraged to better identify and mitigate stranded asset risks for the European banking industry. It highlights the importance of stranding losses in the context of the transition, aiming to further enrich regulatory and supervisory policy dialogues, especially around the novel ‘proactive precautionary’ principle.

1 Chaudhary, ‘From Stranded Assets to Assets-at-Risk: Reframing the Narrative for European Private Financial Institutions’, 2024.

2 Chenet et al., ‘Finance, Climate-Change and Radical Uncertainty: Towards a Precautionary Approach to Financial Policy’, 2021.

THE MICROPRUDENTIAL TOOLKIT: THE ROLE OF THE EBA

The EBA is developing technical standards to support the implementation of the new banking package (collectively referred to as the Capital Requirements Directive or CRD package) under the Basel 3 financial regulation reform. As part of its many mandates, it will soon publish its guidelines on ESG risk management which will then be transposed by EU member states.

This is a crucial moment to set prudential expectations to improve banks' risk management practices, especially regarding asset stranding risks.

An important window of opportunity is open...

The upcoming EBA guidelines on ESG risk management

The draft guidelines issued in January 2024³ call for improved risk management processes supported by observations made by the EBA over recent years on banks' current ESG practices. They demand a complete integration of ESG and climate factors in banks' risk management processes including classifications, models and monitoring frameworks. Nonetheless, **an important real economy impact on banking portfolios has been overlooked: stranded asset risks.**

The EBA should reinforce the existing supervisory framework to help monitor and mitigate stranding risks in banking portfolios. Some of these tools include:

1. Prudential transition plans

As mandated under the new banking package, **prudential transition plans are integrated for the first time into the supervisory framework.** The underlying risk-based approach uses a financial materiality perspective to identify and manage environmental risks. It is crucial to also consider potential **stranding or repricing on assets-at-risk that is compatible with a risk-based approach.** Additionally, using a **'whole of economy'** lens is necessary to capture the completeness of material exposures across value chains, sectors and financial assets, including relevant risk transmission channels.

A prudential transition plan should allow for **prudential oversight** (and corrections) on banks' transition strategy, risk management framework, governance, and internal processes. It would give supervisors an indication of how banks choose to align their financial portfolios with national and European climate objectives. Such a

granular indication of individual banks' ambition to finance the transition efforts of their clients would **help inform supervisory dialogues at both the macro and micro levels.** Necessary steps could then be taken to correct adverse risk-offloading strategies that raise the costs of a disorderly transition by limiting credit to 'brown' borrowers engaged in a credible transition.

2. Supervisory Review and Evaluation Process (SREP)

The SREP is an effective tool to improve individual banks' risk management practices in assessing transition risks, with the possibility of using specific additional capital requirements in case of weak practices. Nonetheless, **SREP capital add-ons do not yet integrate ESG risks** due to the data and methodological challenges of the risk-based approach. This is concerning even as the ECB highlights increasing exposures of euro area banks to significant asset stranding losses with **90% of banks being misaligned** with the Paris Agreement objectives. **The average size of a bank's loan to a misaligned corporation is more than double that of an aligned corporation.**⁴ The less a firm is ready for the transition, the lesser its business competitiveness, and the greater its risk of default from asset stranding impacts, feeding into (significant) transition shocks for banks.

Beyond capital requirements, the SREP helps build discipline and maturity in banks' climate risk capabilities. While assessing **ICAAP and ILAAP**,⁵ supervisors should verify that stranding risk is sufficiently embedded, especially in stress testing and scenario analysis. Banks have made progress in climate risk management

³ European Banking Authority (EBA), 'Consultation Paper - Draft Guidelines on the Management of ESG Risks', 2024.

⁴ European Central Bank (ECB), 'Risks from Misalignment of Banks' Financing with the EU Climate Objectives', 2024.

⁵ The Internal Capital Adequacy Assessment Process (ICAAP) and the Internal Liquidity Adequacy Assessment Process (ILAAP) help supervisors monitor banks' capitalisation and liquidity in managing risks. They feed into the SREP assessments to inform supervisors' bank-specific requirements.

processes on their credit portfolios. While the methodologies continue improving, the scope must also be expanded to include the trading book exposed to transition-driven market, counterparty credit, liquidity and interest rate risks. **When assets devalue, they impact credit portfolios as well as market instruments** such as asset-backed securities collateralized by stranding assets. These repricing losses materialise in banks' ALM (Asset Liability Management) portfolios and short-term investment and trading portfolios. **Forward-looking risk measures based on credible adverse scenarios and counterparty-level granular data** are necessary to overcome the challenges of historical risk-based models to better anticipate asset repricing effects.

3. Expected Credit Loss (ECL) provisions

The IFRS 9 accounting framework requires banks to account for future impairment losses through ECL accounting provisions on their credit portfolios. Fundamentally a forward-looking approach based on future scenarios of asset losses, it is important that banks integrate potential transition-driven repricing impacts in the underlying loss distribution function. **The EBA's supervisory framework should be applied holistically** by banks so that the existing guidelines on ECL provisions⁶ are applied in conjunction with the upcoming guidelines on ESG risk management. **This would ensure the operationalisation (and harmonisation) of climate and transition risks across the supervisory framework** to help banks better absorb transition shocks.

On the other hand, risk-based accounting frameworks may **unintentionally impede banks from financing low-carbon activities**. Risk-based models, even if supposedly forward-looking, can overestimate the future credit worthiness of firms using observed historical risk-return outcomes which were more favourable to high-carbon activities. Consequently, **low-carbon activities can require banks to hold higher loan loss provisions (or ECLs) compared to high-carbon activities**, sometimes nearly double the latter.⁷ If banks are disincentivised from deploying 'green' capital, **the financial cost of an increasingly disorderly transition would be higher** due to the build-up of carbon risk. ECL provisions should sufficiently account for material transition risk through credible forward-looking assessments of borrowers using context-based, granular data.

4. Non-performing loans (NPL) and collateral valuation

The ECB's latest Financial Stability Review report highlights the **deteriorating asset quality in commercial**

real estate (CRE) banking portfolios of the euro area, with signs of increasing NPL ratios.⁸ Paradoxically, NPL loss provisions for CRE exposures appear to be declining. These short-term macro trends could compound with **energy retrofitting requirements** under EU climate neutrality laws that could further contribute to asset deterioration. Devaluations have significant implications for collateralised debt instruments since **almost 40% of euro area bank loans are collateralised by real estate**.⁹ Banks must efficiently account for forward-looking transition risks when repricing assets, including collateralized debt instruments, to avoid facing higher NPL costs if macroeconomic shocks intensify.

The EIOPA's forward-looking quantitative analysis on real estate assets using a 99.5% Value-at-Risk (VaR) model demonstrated a **material risk differential for commercial real estate properties rated F and G** (the least efficient energy ratings).¹⁰ The riskiness of these energy-inefficient properties with their associated depressed prices, was **most reflected in credible, forward-looking scenario analysis rather than in observed historical returns**. Backward-looking analysis revealed inconsistent risk differentials. Supervisory authorities should continue strengthening banks' scenario analysis capabilities to feed into traditional risk-based models used for calibrating loss provisions and collateral valuations.

5. Fair Value Adjustments

Supervisory authorities should incorporate transition risks in calculating fair-valued financial instruments given that such adjustments are already point-in-time and forward-looking. As part of the prudential framework, Additional Valuation Adjustments (AVAs)¹¹ are computed by banks on their fair-valued financial instruments to obtain an appropriate degree of certainty for prudential purposes. Nonetheless, **the impact of ESG risks on valuation adjustments has not been included** in the EBA's draft consultation due to concerns about the robustness of ESG-related uncertainty in the prudential framework.¹²

At the same time, supervisors acknowledge that the **fair value of instruments will not intrinsically reflect the impact of environmental risks** 'if the valuation technique or the market are not sufficiently long-sighted or correctly internalising/perceiving these risks'.¹³ Sufficient evidence already highlights the **inefficient pricing of climate risks by financial market participants**, including banks.¹ Supervisors should, therefore, account for transition risks within AVA calculations to better reflect the fair market value of assets, limiting significant adjustments as transition shocks materialise.

6 European Banking Authority (EBA), 'Final Report on Guidelines on Credit Institutions' Credit Risk Management Practices and Accounting for Expected Credit Losses', 2017.

7 Gasparini et al., 'Model-Based Financial Regulations Impair the Transition to Net-Zero Carbon Emissions', 2024.

8 European Central Bank (ECB), 'Financial Stability Review', November 2024.

9 Horan et al., 'Asset Prices, Collateral and Bank Lending: The Case of COVID-19 and Real Estate', 2023.

10 European Insurance and Occupational Pensions Authority (EIOPA), 'Prudential Treatment of Sustainability Risks', 2024.

11 Institutions are required to calculate AVAs for their fair-valued financial instruments and commodities, which are intended to bring the value of those instruments to a level that is appropriately certain for prudential purposes. The prudent value is the value at which institutions are 90% confident that they will exit a position based on the applicable market conditions at the time of the assessment.

12 European Banking Authority (EBA), 'Consultation Paper on the amending RTS on Prudent Valuation', 2024.

13 European Banking Authority (EBA), 'The Role of Environmental Risks in the Prudential Framework: Discussion Paper', 2022.

THE MACROPRUDENTIAL TOOLKIT: EUROPEAN AND NATIONAL COMPETENT AUTHORITIES (NCAs)

Microprudential supervisory tools alone cannot correct and mitigate asset stranding effects, especially at a systems level. Crucially, **macroprudential supervisors both at the European and national member state levels** should deploy the appropriate tools to help buffer the banking system from systemic stranding losses. The effective use of such tools would also **send a powerful signal to the banking industry to align their portfolios** with European and national decarbonization objectives. Some useful macro tools are discussed below.

1. Dynamic provisioning

Setting aside higher loan loss provisions during favourable economic conditions to buffer against credit losses during downturns is a useful macroprudential strategy for financial stability. **Loan loss provisions are procyclical to GDP growth**, so that when the economy booms, banks reduce their loss provisions and vice versa. Since loss provisions directly impact banks' capital ratios, they also influence banks' ability to provide credit in economic downturns.¹⁴ Put simply, **when GDP shrinks, banks increase their loss provisions in expectation of higher credit defaults (and NPEs), which in turn reduces their capitalisation to finance new loans, leading to a credit crunch**. This is a concern for financial stability due to the loss amplification impacts on banks' capital and lending abilities.

The solution may lie in countercyclical dynamic provisioning based on 'estimates of long-run or through-the-cycle expected losses'¹⁵ that can **smooth provisioning requirements by increasing loss provisions during booms**. Banks could then draw from these buffers during downturns without adversely affecting capital. Banco de España was the first European supervisor to implement dynamic provisioning in 2000 to cope with the increasing credit risks in Spanish banking portfolios coupled with low loan loss provisions. This helped buffer credit losses to some degree for Spanish banks during the 2008 global financial crisis as they managed to absorb some of the unexpected defaults among borrowers.¹⁶ Macroprudential supervisors should introduce dynamic provisioning to **safeguard system stability from transition shocks, including significant stranding on 'brown' assets**, amplified by procyclical loss provisions.

2. Systemic Risk Buffer (SyRB)

Macroprudential authorities have acknowledged the appropriateness of the SyRB to **contain climate risk build-up** among euro area banks and **protect financial stability**.¹⁷ The CRD V, passed in 2019, made the SyRB more flexible and dynamic, enabling authorities to apply it on a subset of banks, specific sectoral exposures (commonly, real estate) or generally across the system. Buffer rates can be flexibly calibrated across a spectrum from flat to variable rates to address vulnerabilities. A generalised SyRB calibrated with multiple rates would help build overall system resilience against unexpected losses. Coupled with it, a **sectoral SyRB on high transition risk** or 'brown' sectors would increase the cost of lending for exposed banks. This would incentivise them to **reduce their transition risk exposures to benefit from favourable capitalisation**. However, the calibration of the buffer rate should consider borrower-level transition readiness and **specificities to avoid unintentionally penalising all exposures** within a high-risk sector, contradicting transition finance needs.¹⁸

Prudential adjustments are needed to ensure that the SyRB despite its effectiveness in reducing system vulnerability **does not inadvertently limit bank credit supply to transitioning high-risk borrowers**. Borrowers in high-risk sectors who have adapted their business models and operations to align with the transition are better placed to absorb transition risks, including asset stranding. Bank credit supply should preferentially benefit these aligning firms despite their current emission-intensive operations to help finance their credible transition plans. An **individualised, bank-level SyRB** would be useful for lowering the buffer rate

14 Huizinga, H. and Laeven, L., 'The Procyclicality of Banking: Evidence from the Euro Area', 2019.

15 Mahapatra, 'Underlying Concepts and Principles of Dynamic Provisioning', 2012.

16 Saurina, 'Dynamic Provisioning: The Experience of Spain', 2009.

17 European Systemic Risk Board (ESRB), European Central Banks (ECB), 'Towards Macroprudential Frameworks for Managing Climate Risk', 2023.

18 Markus Behn et al., 'The Sectoral Systemic Risk Buffer: General Issues and Application to Residential Real Estate-Related Risks', 2024.

for those banks **financing such transition-ready firms to support the cost viability of the transition.**¹⁹ Such a granular, bank-specific incentive would **encourage proactive behaviour among banks** to combat transition risks by financing the reduction of real economy emissions.

3. Other macroprudential tools

Prudential authorities are increasingly considering **carbon-related concentration risk as a source of material credit losses** which could amplify from a disorderly transition. **Transition risk and concentration risk amplify each other** since a bank with higher concentration risk to high-carbon exposures (from clients less transition-ready) could face higher transition losses. The ECB/ESRB found that **these losses could be almost 60% higher.**¹⁷

Concentration risk limits should better identify high-carbon exposures on a ‘whole of economy’ lens to reduce carbon build-up and mitigate possible stranding contagion effects between banks and non-banking financial institutions (NBFIs).

Macroprudential tools, such as **system-wide stress tests using adverse outlier scenarios**, are essential for capturing sudden asset repricing effects. The

European supervisory authorities’ first-of-its-kind **‘fit for 55’ stress test serves as a learning exercise – not as a forecast of banks’ future performance**—in addressing key limitations in modelling uncertainty and data gaps.²⁰ The “Run on brown” adverse scenario, designed to capture exogenous asset repricing effects from transition shocks, estimates a moderate loss of 6.7% relative to total banking assets. On a cautionary note, **these losses may be underestimated due to several limitations**, particularly the static balance sheet assumption. In response to transition shocks on “brown” assets, banks may shift their portfolios toward “green” assets, potentially **reducing credit supply** to credible emission-intensive borrowers. More encouragingly, these moderate losses **should serve as a harbinger of the banking system’s resilience to transition shocks, encouraging banks to boost financing needed to meet the EU’s 2030 climate ambitions.**

Macroprudential authorities should closely monitor both endogenous and exogenous shocks on banking portfolios. **Maintaining financial stability while correcting near-term risk offloading behaviour towards clients in need of transition finance is important.** Otherwise, such firms may seek funding in other jurisdictions with less ambitious climate neutrality policies, reducing the competitiveness of the European banking system.

¹⁹ Ikeda and Monnin, ‘Principles for Addressing Climate Systemic Risks with Capital Buffers’, 2024.

²⁰ European Supervisory Authorities and the European Central Bank (ECB), ‘Fit-for-55 Climate Scenario Analysis’, 2024.

CONCLUSION

Prudently managing stranded asset risk in the banking sector will require a two-pronged approach. On the one hand, asset mispricing and underestimated, procyclical loss provisions jeopardise financial system stability from the eventual materialisation of transition shocks on banks' capital. This requires a **precautionary, credible forward-looking lens** that captures looming stranding risks embedded in banking portfolios, despite the inherent methodological challenges of the risk-based approach. On the other hand, the only way to protect financial stability in the near to long run is to **proactively reduce real economy emissions by financing firms' transition activities.**

Banks are the 'economic bridge to the future'²¹ of Europe's climate and net-zero ambitions. Yet, banks are hesitant to scale transition finance for the emission-reduction needs of their clients. High-emission activities, even if judged credible, can carry reputational risk (and sometimes litigation risk) consequences, while the perceived **risk-reward profiles of transition projects hinder banks' lending appetite.** National public policy, articulated with incentivising financial regulatory tools is crucial to help unlock private finance flows for assets-at-risk. **The current siloed policy approach to transition finance stymies the capital flows needed to reach Europe's net-zero targets.²²** A clear, credible long-term economic policy signal, complemented by accompanying **prudent capital and risk benefits,** would lower the cost of risk, boosting investment favourability of transition projects for banks.

While monitoring the low-carbon alignment of banking portfolios with consequent asset stranding impacts, prudential authorities must ask themselves:

1. To what extent are transition-driven **asset stranding or repricing risks already factored** into banks' financial portfolios?
2. Which **risk management strategies** do banks use to mitigate these risks (divestment, diversification or proactive transition financing to clients)?
3. Which **type, volume and purpose of financial flows** are directed towards real economy transition needs?

²¹ Buch, 'Bridges to the Future: Managing Bank Risk amid Uncertainty', 2024.

²² Cardona et al., 'For an Articulated Approach to Economic Policy and Financial Regulation to Deal with Climate Challenges', 2023.

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