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D4.1.3 – Enhancing the performance assessment of banks with Multicriteria Analysis

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Enhancing the performance assessment of banks with Multicriteria Analysis

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Executive Summary

Assessing bank performance accurately is crucial for regulators, investors, and policymakers to ensure both financial stability and sustainability. However, traditional methods often fail to account for important aspects, such as the integration of Environmental, Social, and Governance (ESG) factors.
This policy brief summarizes key insights from the study *"Assessing the Performance of Banks through an Improved Sigma-Mu Multicriteria Analysis Approach"* by S. Angilella et al. (2024), which introduces an advanced methodology for evaluating bank performance. The improved sigma-mu (σ-μ) approach combines multicriteria decision analysis incorporating Pareto dominance principles, leading to a more comprehensive performance assessment.
By analysing a set of European banks that passed the 2017-2021 European stress test conducted by the European Banking Authority (EBA), the study reveals performance variations influenced by country specific green policies and individual bank practices. This brief emphasizes the need for enhanced bank evaluation method and provides recommendations for incorporating these techniques into regulatory frameworks.

Context and Importance of the Issue

The banking sector plays a crucial role in economic stability, but traditional performance assessment methods, primarily based on financial ratios, often overlook factors such as operational efficiency, risk management, and ESG performance. As regulations get stricter and more investors focus on sustainable options, the need for a more comprehensive approach grows. Different stakeholder perspectives create uncertainty in assessment criteria, leading to inconsistent evaluations. Additionally, current regulatory frameworks lack standardized evaluation tools that integrate both financial and non-financial factors.

Specifically, multiple regulatory frameworks increasingly push banks to develop and apply quantitative methodologies to measure and disclose their sustainability performance, especially regarding ESG (Environmental, Social, and Governance) factors. The current regulatory framework is articulated as follows.

Concerning regulatory drivers, we recall the EU Taxonomy (EU Regulation 2020/852) and SFDR (Sustainable Finance Disclosure Regulation), which require banks to assess ESG risk exposure, while with respect to disclosure obligations banks must report Key Performance Indicators (KPIs) such as Green Asset Ratio (GAR) (Disclosures Delegated Act (EU) 2021/2178) and Principal Adverse Impact (PAI) indicators. For its calculation, the GAR has some methodological limitations, favouring banks more exposed to Non-Financial Reporting Directive (NFRD)-reporting corporates. At the level of supervision integration, EBA has already flagged that the guidelines for ESG risks will be eventually integrated into the Supervisory Review and Evaluation Process (SREP).

This adds pressure on banks to use consistent and reliable ESG metrics for both internal risk models and external reporting. To address these issues, this study provides a multicriteria methodology, illustrated in the section below. Such approach offers a solution by integrating financial performance with sustainability metrics. This advanced methodology helps policymakers make better decisions, keep financial stability, and encourage sustainable banking practices.

Methodology

The sigma-mu efficiency analysis, introduced by Greco et al. (2019), combines elements from Multi-Criteria Decision Aid (MCDA) models with efficiency measurement techniques. Specifically, by using the Stochastic Multi-Attribute Acceptability Analysis (SMAA), it estimates performance and variability across different weighting scenarios, making it particularly useful for assessing banks under uncertain conditions. The approach follows the Pareto-Koopmans efficiency concept, deeming an alternative efficient if it achieves high performance with low variability, and it addresses the challenges of comparing alternatives far from the efficiency frontier by constructing local efficiency frontiers.

Building on this, the study by Angilella et al. (2024) enhances the sigma-mu approach by incorporating Pareto dominance principles, ensuring more accurate and reliable evaluations. The principal advancements are the following:

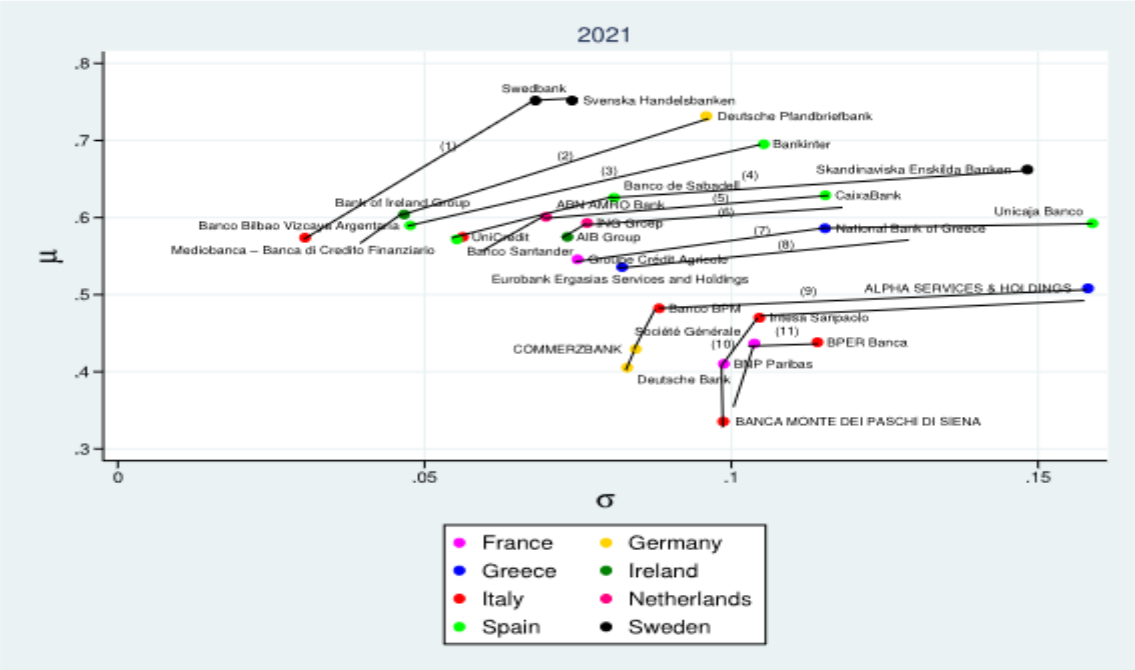
- Iterative construction of Pareto-Koopmans efficiency frontiers to ensure consistent and reliable evaluations.
- Integration of both financial and ESG performance criteria, providing a more comprehensive assessment of bank performance.

- Application to European banks using data from the European Banking Authority's (EBA) 2017-2021 stress tests offering real-world insights.

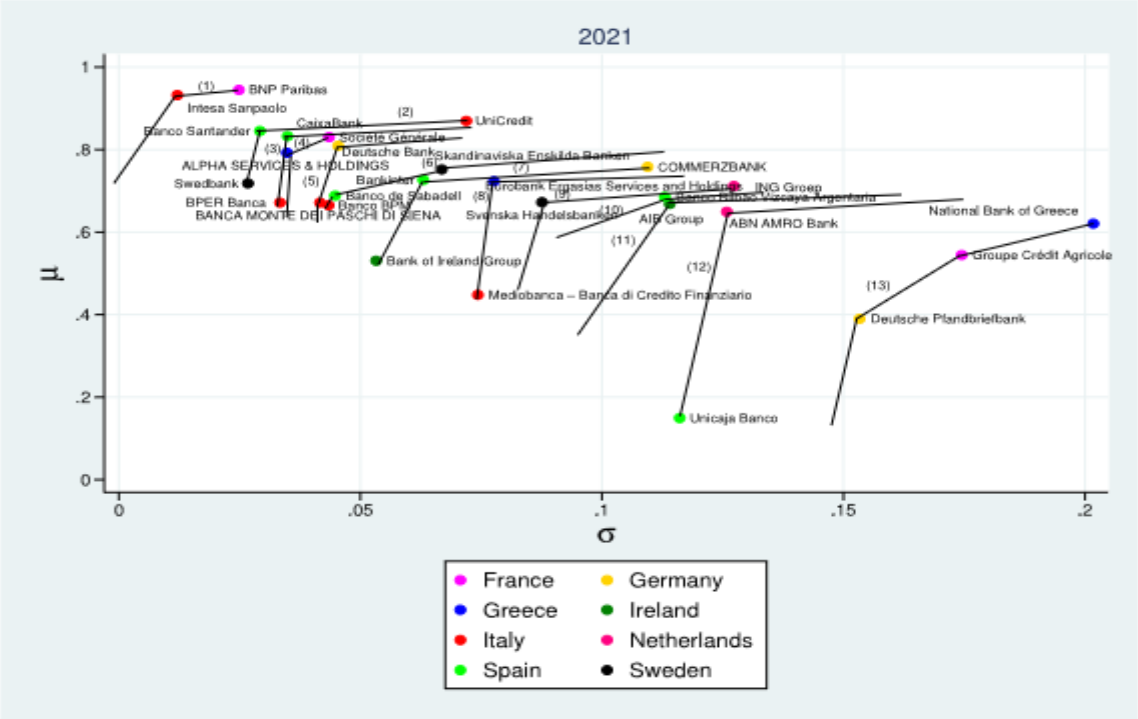
Policy Options and Analysis

Option 1: Integrate ESG Factors into Performance Assessments of Banks

- **Analysis**: The study of Angilella et al. (2024) highlights significant financial and ESG performance disparities among banks. Figure 1 below illustrates the families of σ–μ frontiers for 2021 based on financial and ESG criteria. The financial criteria were selected based on the CAMELS framework, which evaluates financial institutions across six key dimensions: Capital adequacy, Asset quality, Management effectiveness, Earnings power, Liquidity, and Sensitivity to market risks. Swedish banks rank highest in financial performance, alongside some banks from Germany (Deutsche Pfandbriefbank), Italy (Mediobanca), the Netherlands (ABN AMRO Bank), and Spain (Bankinter). However, these banks perform poorly on ESG criteria. Conversely, several French banks (e.g. BNP Paribas, Société Générale), as well as Italian (Unicredit) Spanish (Banco Santander), and German banks (Deutsche Bank), rank highly on ESG criteria, despite their weaker financial performance.



FINANCIAL criteria



ESG criteria

Figure 1. Families of σ-μ Pareto-Koopmans frontiers by country-year in the disaggregated analysis: FINANCIAL vs. ESG criteria.

- **Policy Implications:** Regulators and financial institutions should adopt evaluation methods that incorporate both financial and ESG criteria. By considering both aspects, regulators can better monitor long-term risks, while financial institutions can align their strategies with market expectations and regulations, promoting a more resilient and responsible banking sector.

Option 2: Promote sustainability practices

- **Analysis:** The observed discrepancies in bank performance can be explained by variations in national green policies and individual banks' involvement in financing low-carbon transition initiatives. Banks operating in countries with stronger green policies tend align better with low-carbon goals, improving their ESG performance.
- **Policy Implications:** To promote long-term stability and sustainability, banks should be encouraged to enhance sustainability practices in line with country-specific green policies. Strengthening these practices would improve ESG performance and contribute to a more resilient banking sector.

Option 3: Standardize evaluation methodologies

- **Analysis:** The study identifies areas where banks could improve efficiency, particularly concerning sustainable practices.
- **Policy Implications:** Adopting standardized multicriteria analysis approaches, such as the improved sigma-mu method, can ensure consistent and comprehensive assessments across the banking sector. This methodology provides policymakers, regulators, and financial institutions with reliable benchmarks to support informed decision-making, promote sustainable banking practices, and enhance transparency and accountability in the financial system.

Recommendations

1. **Integration of ESG factors into bank performance assessments**
   - Establish standardized metrics that combine financial and ESG performance, facilitating transparent and comparable evaluations across banks.
   - Mandate comprehensive ESG reporting aligned with global standards (e.g., Task Force on Climate-related Financial Disclosures (TCFD) (Financial Stability Board, 2017) and EU Taxonomy (2020) guidelines) to enhance transparency and accountability across banks.
2. **Strengthen the alignment between banking practices and national green policies**
   - Introduce tax benefits, lower capital requirements, or preferential funding for banks that actively support low-carbon transition initiatives.
   - Promote R&D in sustainable banking products, such as green bonds and sustainability-linked loans, to encourage market-wide adoption of responsible finance.
3. **Adoption of standardized evaluation methodologies**
   - Require banks to adopt standardized multicriteria analysis methods, such as the improved sigma-mu approach, to evaluate both financial and ESG performance.
   - Establish clear performance assessments guidelines with uniform evaluation criteria to improve cross-board comparability and create a more integrated financial system.

Implementation Considerations

1. **Regulatory integration:**
   - Collaborate with financial regulators and central banks to update existing evaluation frameworks.
   - Create working groups to align the sigma-mu approach with Basel III requirements.
2. **Data and Reporting standard:**
   - Harmonize ESG reporting metrics across jurisdictions.
   - Encourage banks to adopt standardized disclosure practices.
3. **Capacity building:**
   - Provide training for regulators and financial analysts on using the sigma-mu methodology.
   - Develop digital tools for automating bank performance assessments.

Conclusion

The improved sigma-mu multicriteria analysis approach represents a significant advancement in bank performance evaluation, addressing the limitations of traditional methods by integrating financial and ESG factors. Its adoption in regulatory frameworks will enhance transparency, promote sustainable banking practices, and improve financial stability. Policymakers should prioritize its implementation through regulatory reforms, standardized reporting, and targeted incentives to foster a more resilient and responsible banking sector.

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