

# “ESG practices maturity in Ukraine’s largest banks: Evaluation framework and insight”

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# ESG PRACTICES MATURITY IN UKRAINE'S LARGEST BANKS: EVALUATION FRAMEWORK AND INSIGHT

## Abstract

Assessing the ESG readiness of the Ukrainian banking sector is important in the context of growing global attention to sustainable finance, Ukraine's aspiration to align with EU regulations, and overcoming war consequences. The study examines the ESG practices of Ukraine's largest banks and their disclosure, providing a framework for assessing their ESG commitment and maturity. The study aims to identify the level of ESG practices development, including their disclosure, in Ukraine's largest banks. The paper suggest that this ESG maturity scoring approach may be relevant for emerging sustainability markets. The scoring methodology comprises two sub-indices: the first evaluates ESG information disclosure through content analysis of official websites, while the second uses frequency analysis to evaluate ESG-related terminology in banks' annual reports. The results show that ESG practices of the largest banks in Ukraine and their integration into corporate reporting are on the preparatory stage, with most banks exhibiting a low or moderate level of ESG maturity. Foreign-owned and state-owned banks demonstrate better results. There is no interconnectedness between banks' asset size and ESG maturity. The paper highlights the significance of regulatory support in accelerating ESG integration within Ukraine's banking sector. The proposed framework can serve as a diagnostic tool for regulators, investors, and bank managers to monitor progress, benchmark practices, and guide strategic alignment with EU sustainability requirements. The findings contribute to a broader understanding of how ESG principles can be applied in uncertain financial ecosystems, offering insights for other developing or conflict-affected countries.

## Keywords

financial ecosystem, ESG reporting, non-financial disclosure, sustainable finance, sustainability, wartime

## JEL Classification

G21, M14, O16

## INTRODUCTION

The role of the financial sector in advancing sustainable development has garnered increasing attention, particularly as countries strive to address global challenges such as climate change, poverty, and social inequality (OECD, 2020). Sustainable finance has become a key mechanism for mobilizing capital toward sustainable development goals as it integrates environmental, social, and governance (ESG) considerations into financial decision-making (UNEP FI, 2018). Banks, being the central actors in the financial system, are best positioned to influence capital allocation and promote ESG-aligned business models by directing investments and credit toward low-carbon, socially responsible, and innovation-driven sectors (European Commission, n.d.).

In the EU, ESG transparency has become a regulatory priority, particularly through the implementation of the Corporate Sustainability Reporting Directive (CSRD) that mandates banks, among others, to

disclose their sustainability impacts and risks (European Commission, n.d.). For Ukraine, which has declared EU integration as a strategic goal, aligning with EU sustainability standards is essential.

ESG transformation of a banking system in Ukraine is even more important than in other countries. Except for global issues, Ukraine faces a range of challenges caused by the ongoing war that affect the economy of Ukraine, such as destroyed businesses, damaged infrastructure and dwellings, exacerbated environmental degradation, and social vulnerabilities like unemployment, poverty, and a significant decrease in living standards (World Bank, 2025). It caused a need for financial resources for economic and social recovery, launching new enterprises, and the reconstruction of destroyed or damaged ones.

There is also a complex negative impact of military operations on the environment, which includes air, water, and soil pollution by explosions and fires, destruction of biodiversity, and deforestation, which reduces the absorption of carbon dioxide (World Bank, 2025). Mining of territories poses a serious threat to the lives and health of people. Thus, there is an urgent need for humanitarian demining, which requires significant financial resources. In these conditions, banks play a key role in financing environmental restoration projects. So, the environmental dimension of banks' activities in Ukraine becomes even more critical.

In this context, sustainable finance and ESG orientation of banks' activities are not only a regulatory requirement but also a critical tool for economic recovery and long-term resilience. Although Ukraine's banking sector is gradually incorporating environmental, social, and governance principles, it is still at the transitional stage. The war has further complicated the ability of banks to systematically implement and disclose ESG practices, with them paying less focus on transparency, comparability, and strategic commitment. Currently, there is a lack of standardized assessment tools to evaluate the effectiveness of Ukrainian banks in disclosing sustainability-related information. Furthermore, it remains unclear how ownership structure and institutional factors affect ESG maturity and whether larger institutions demonstrate more advanced sustainability practices.

Despite growing expectations for sustainability reporting, there is a limited understanding of the readiness of Ukrainian banks to implement and develop ESG principles. Taking into consideration the growing need for financing recovery projects for sustainability in Ukraine, there is a call for research on the evaluation of the current level of ESG practices implementation and their maturity in banks in the absence of standardized frameworks tailored to developing and crisis-affected financial systems.

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## 1. LITERATURE REVIEW

Implementing ESG practices in banks, measuring their effects, and identifying key factors and obstacles are issues of high importance and interest for both the business and academic spheres. Thus, academic interest in how banks worldwide are shifting their processes toward greater sustainability for long-term stability and profitability has been growing over the last decade, reflected in a substantial number of academic publications on the topic. Meanwhile, this paper relates primarily to the strand of literature attempting to analyze the extent of banks' ESG performance assessment

and disclosure, which results from the relevant practices and procedures.

Fatemi et al. (2018) prove that there is an effect of both ESG activities and their disclosure on the firm value. ESG practices have their advantages and disadvantages, which can have a positive or negative impact on the value of a firm, respectively. In this case, ESG disclosure plays a vital moderating role between ESG performance and firm value, neutralizing the negative effects of ESG weaknesses and enhancing the positive impact of their strengths. Buallay (2019) highlights a tremendous positive influence of ESG disclosure on banks' fi-

nancial indicators in general. Many recent studies, mostly focusing on the developed and relatively stable markets, find a positive association between strong ESG profiles and bank profitability (Menicucci & Paolucci, 2022; Billio et al., 2021; Korzeb et al., 2024; Nathania & Ekawati, 2024).

Furthermore, an inverse relationship between a bank's NPL portfolio and its ESG performance is mostly found (Lee & Koh, 2024; Liu et al., 2023; Rahat & Nguyen, 2023), although there is also some contradictory evidence from the European listed banks of the negative impact on the credit risks and quality of loans (Bruno et al., 2024). Andries and Sprincean (2023) highlight that the benefits of higher ESG performance are primarily realized by large banks and those operating in developed countries. Further, considering the interconnectedness of foreign ownership and a bank's ESG performance, Kouzez et al. (2024) suggest that a greater focus on ESG activities appears to improve performance exclusively among foreign-owned banks, indicating that such investments are particularly valuable for these institutions.

When it comes specifically to measuring ESG practices in banking, it typically involves a combination of standardized reporting frameworks and third-party ratings. Large banks often publish annual sustainability or ESG reports aligned with global standards (e.g., GRI, SASB), and their ESG performance is scored by rating agencies such as MSCI, LSEG (Refinitiv), or Sustainalytics (Menicucci & Paolucci, 2022). These ratings aggregate dozens of indicators across all three ESG pillars, providing a benchmark for comparing ESG maturity. Sustainalytics provides actual companies' ESG Risk Ratings across various industries, including banking (Sustainalytics, n.d.). The Refinitiv ESG Company Scores assess companies', including the largest banks and central banks, ESG performance, commitment, and effectiveness across 10 main themes, based on publicly available and auditable data (LSEG, n.d.).

Researchers' attention is paid to the assessment of banks' ESG performance as well. Gai et al. (2023) propose a model for aggregated banks' environmental, social, governance, and indirect impacts score. This tool aims to assess the banks' actual ESG disclosure. It is worth noting that an ESG

score serves as a benchmark for evaluating a bank's commitment to sustainable development, reflecting factors like sustainable procurement, indirect greenhouse gas emissions, fair labor practices, and corporate governance. But this model can be used only for those banks that provide detailed ESG data collection.

Zhou et al. (2024) stress the lack of in-depth analysis of textual information on ESG disclosures, noting that existing research on this issue focuses on the impact factors and quality of disclosures, based on the third-party assessment as a measure of the ESG disclosure quality. Recent research (Krueger et al., 2021; Khamisu et al., 2024) also finds that mandatory ESG reporting requirements can significantly improve the information environment and market outcomes. Moreover, the EU's CSRD requires banks to provide detailed ESG disclosures, thereby enhancing transparency (Yang, 2024). Early evidence suggests such regulations reduce information asymmetry and even stock price volatility (Krueger et al., 2021). EU banks, in particular, have achieved higher ESG disclosure levels, bolstered by earlier adoption of sustainability reporting practices and regulations (Xiao et al., 2024; Wang, 2023; Liu, 2022). Rezaee et al. (2022) found that European banks overall provided more extensive ESG disclosures than their U.S. counterparts even during voluntary reporting regimes (2007–2016), and that the gap widened after the EU's 2017 mandate for non-financial reporting. This regulatory push has given EU banks a head start in integrating ESG factors into their public reporting. By contrast, U.S. banks, operating without a comprehensive mandatory ESG disclosure regime, historically approached ESG more voluntarily, resulting in lower disclosure quality.

In emerging markets, regulators are also moving toward compulsory reporting. But emerging market banks tend to report less ESG information on average, owing to later adoption of sustainability practices and fewer disclosure requirements (Lavin & Montecinos-Pearce, 2021). In Latin America, for instance, a lack of transparency and established ESG reporting norms has been noted, though improvements are occurring as stakeholder awareness grows. In the context of Ukraine, despite the wartime challenges and primary focus on defense considerations, the issues of ESG dis-

closure have not been abandoned. Makarenko et al. (2024) provided a brief overview of Ukraine's financial ecosystem in terms of ESG disclosure under martial law, and showed its relatively high level of ESG readiness by comparing some of the largest Nordic and Ukrainian banks based on their alignment with CSRD requirements. They highlight, in particular, that in Ukraine so far, the disclosure is voluntary and there is no standardized approach to ESG reporting, which negatively affects the completeness of the reporting.

At the same time, the country's shift toward sustainability-related goals, especially the transformation of the financial ecosystem, is obvious; for example, while assessing the level of ESG transparency within various sectors of the Ukrainian economy prior to the full-scale invasion, it was shown that financial services sector demonstrated one of the highest levels thereof (Corporate Governance Professional Association, 2020). Ukraine's Core Code of Corporate Governance, for instance, explicitly recommends that companies disclose their ESG initiatives, signaling a shift toward greater transparency (National Securities and Stock Market Commission, 2020). The National Bank of Ukraine implemented a Sustainable Finance Development Policy in 2021 (NBU, 2021). Although this policy has experienced delays due to the war, its continued commitment to ESG principles underscores the strategic importance of aligning the financial sector with long-term European sustainability standards, even under conditions of prolonged military crisis (NBU, 2024). Moreover, in April 2025, the National Bank of Ukraine presented a draft on the White Paper on Environmental, Social, and Governance (ESG) Risks Management in the Financial Sector that includes, among other aspects, the prospects of ESG disclosure and requirements for banks on ESG reporting (NBU, 2025). By improving data availability, robust ESG disclosure frameworks are expected to better enable stakeholders to evaluate banks' sustainability performance and hold them accountable.

In line with the European integration of Ukraine, it may be assumed that the regulatory framework of the EU is going to apply to the Ukrainian financial sector in several years from now. Thus, assessing the readiness and maturity of ESG practices in

Ukrainian banks is both timely and aligned with an international push that increasingly views robust ESG performance as synonymous with prudent, modern banking.

Despite the extensive research on ESG implementation in banks, some gaps may be identified. First, as most research focuses on the established and developed markets, understanding how sustainability-related financial practices evolve and function in the developing countries, particularly in Ukraine, is worth paying attention to, as the intersection of financial resilience, ESG priorities, and crisis response in such environments is largely underexplored. Second, there is limited empirical evidence or theoretical grounding to guide policymakers and financial institutions in embedding sustainability principles during periods of geopolitical instability and reconstruction, and, in particular, in the context of war. Third, there is a lack of research on the banks' ESG maturity assessment based on publicly available data, especially for non-listed banks.

To address the underlying gaps, this paper aims to assess the level of ESG practices development, including their disclosure, among Ukraine's largest banks.

## 2. METHODS

A multi-stage empirical approach is used to assess the ESG practices maturity of 30 leading Ukrainian banks, divided by ownership type into three groups: state-owned (government-controlled institutions), foreign-owned (subsidiaries of international banking groups), or locally-owned private banks (Appendix A, Table A1). The sample was selected due to the systemic importance and combined market share of these banks (97.5% of total banking assets as of January 1, 2025) in the national banking sector.

The research design of the study implies the development of the ESG Maturity Index, which is calculated on the basis of two sub-indices: the Index of Bank's Strategic ESG Implementation Disclosure (S1); the Index of Strategic ESG Orientation Disclosure in Annual Reports (S2).

**Table 1.** Sample profile by ownership type

Ownership type	Number of banks	Share, %	Systemically important banks number and share in a group	Aggregate assets, UAH mln	Share in total assets, %	Asset range, UAH mln	
						min	max
State-owned	5	16.7	5 (100%)	2,093,686.3	56.9	145,141.3	956,714.2
Foreign-owned	11	36.7	5 (45.5%)	917,738.4	24.9	9,802.6	236,317.5
Locally-owned	14	46.7	5 (35.7%)	670,440.9	18.2	10,847.2	195,762.7
Total	30	100.0	15 (50%)	3,681,865.6	100.0	9,802.6	956,714.2

Data for sub-index 1 (S1) are collected through a systematic content review of each bank's official website (March 2025 snapshot). Publicly available sections are examined for information related to sustainability and ESG, including dedicated webpages on environmental initiatives, social responsibility programs, governance practices, sustainability strategies, and non-financial reports. For sub-index 2, the most recent annual report for each bank was retrieved, typically the 2023 report or the latest published when the 2023 version had not yet appeared owing to wartime reporting delays. As the National Bank of Ukraine relaxed the requirement for timely public financial reporting under martial law, many Ukrainian banks have not followed the usual reporting schedule. Consequently, reporting periods vary slightly; most banks' latest reports refer to 2023, whereas in a few instances, the 2022 report served as the most recent document available by early 2025. All annual reports (PDF or HTML) were downloaded from official banks' websites. All data employed are publicly available information issued by the banks; therefore, this assessment can be updated as disclosures evolve.

The Index of Bank's Strategic ESG Implementation Disclosure (S1) assesses the scope and depth of ESG-related information disclosed on the bank's official website. It reflects how transparently banks communicate their ESG strategies, policies, and initiatives to the public. A structured scoring system was applied to evaluate each bank's ESG disclosure on its website across seven key dimensions:

1. Strategic documents on ESG or Sustainable Development (maximum score: 3) – availability of a publicly accessible document that outlines the bank's sustainability or ESG strategy or policy (e.g., Sustainable Development Strategy, ESG Policy, Environmental and Social Responsibility Policy, etc.). The maxi-

um score is awarded when a bank provides such a document.

2. Dedicated ESG, Environmental & Social (E&S), or Sustainable Development webpage (maximum score: 3) – existence and quality of a website section specifically devoted to ESG or sustainability matters (e.g., a "Sustainability" or "ESG" webpage). Points reflect both availability and substantive content.
3. Dedicated webpage for environmental (E) issues (maximum score: 1) – availability of a separate webpage or section detailing environmental initiatives such as climate-risk management, green-financing products, and carbon footprint reduction efforts.
4. Dedicated webpage for social (S) issues (maximum score: 1) – availability of a section focusing on social responsibility initiatives, including community programs, financial inclusion efforts, and employee diversity and well-being policies.
5. Dedicated webpage for governance (G) issues (maximum score: 1) – availability of specific information on corporate governance practices on the bank's website.
6. Publication of a bank's stand-alone non-financial report (maximum score: 4) – the availability of an ESG or sustainability report separated from the annual financial report on the website of a bank. This indicator is a crucial one and has the highest score as it reflects the bank's ESG performance, results of ESG practices implementation, and its further prospects. Sustainable or ESG reporting indicates that a bank is not at the first stage of ESG incorporation into its activity, but has particular practices implemented, including

sustainable reporting, that increase the bank's transparency and ESG maturity. The maximum score is assigned when the latest sustainability report is provided; partial scores are given if only an older report or a brief brochure is available.

7. Parent Company's ESG Report Accessibility (foreign-owned banks only) (maximum score: 1). This indicator determines whether the bank's website links to or provides the parent company's sustainability or ESG report. The availability of this document signals transparency and potential knowledge transfer of advanced ESG practices. If a bank is a part of a foreign financial group, it has access to the best practices and advanced solutions of the parent company in the field of ESG implementation, which is an additional advantage for the ESG maturity of a bank.

The scores across all seven dimensions were summed to a raw total (maximum score: 14) and then normalized to a percentage:

$$S1 = \frac{\text{Bank's score}}{14} \cdot 100\% \quad (1)$$

Thus, this transformation ensures that all scores are expressed as a percentage for further comparison; 100% indicates full compliance with the evaluated disclosure criteria, whereas 0% means the bank's website represents no ESG disclosure.

The Index of Strategic ESG Orientation Disclosure in Annual Reports (S2) gauges how much attention a bank's annual report pays to ESG and sustainable development topics. A text-mining content analysis was applied to each bank's annual report using a predefined set of 30 keywords and phrases relevant to ESG. The construction of S2 proceeded in five main steps:

1. Reports collection. The latest available annual reports for all 30 banks were gathered, as described above. Each report was verified to ensure it was an official, complete document (not a summary) for the given year.
2. Pre-processing. Each report was converted to plain text for analysis. Irrelevant sections (table of contents, headers/footers, legal disclaimers, etc.) were removed to focus on the narrative content. This cleanup ensured that spurious text, such as page headers or repeated footers, would not produce false hits in the keyword search.
3. Keywords search. A comprehensive list of ESG-related terms that banks might use in reporting was compiled. This list includes general terms such as "sustainable development", "ESG", "environmental and social (E&S)", "climate risk", "corporate social responsibility", "carbon footprint", "green lending", and "UN SDGs", as well as relevant abbreviations (e.g., CSR, SDG) and references to emerging regulations (e.g., "CSRD"). In total, 30 distinct keywords or phrases covering environmental, social, and governance themes were used. A computerized search was then conducted within each annual report's text for occurrences of these keywords (accounting for different word forms and cases). Every potential match was manually reviewed by two researchers to confirm the usage of these words or phrases in an ESG context, filtering out irrelevant ones. To make the scoring robust, a binary-occurrence approach was adopted: for each of the 30 ESG terms, a bank's report received a score of "1" if the term appeared at least once in a meaningful context or "0" if it did not appear. Thus, a bank could score up to 30 if all ESG concepts were mentioned at least briefly.
4. Quality control. Several measures were taken to ensure the reliability of the text-search results. Two independent search algorithms were employed: one for direct keyword matching and another using a broader set of synonyms, to capture variations in terminology. The two researchers' manual checks were compared to achieve a high inter-coder agreement (Cohen's  $\kappa > 0.80$ ), with discrepancies resolved through discussion. The approach was also piloted on a few sample reports to fine-tune the keyword list, ensuring important concepts were not missed and irrelevant ones were not over-counted.
5. Scoring and normalization. For each bank, the binary scores across all 30 ESG terms were summed to obtain a raw count of how many

distinct ESG topics appeared in its annual report. Finally, the normalization was performed using the formula:

$$S2 = \frac{\text{Bank's score}}{30} \cdot 100\%. \quad (2)$$

Thus,  $S2 = 100\%$  means the bank's annual report (or accompanying sustainability report) touched on all major ESG areas considered, whereas  $S2 = 0\%$  means it contained no substantial mention of any of these topics. Among the potential limitations of this approach is the lexical variability that may lead to missed references. Moreover, content analysis only captures the fact of a mention and does not reflect the extent of practical implementation of environmental or social commitments.

Accordingly, in the broader research, content analysis of the reports was supplemented by a review of the official websites of the sampled banks for ESG-related or sustainability-related content. This approach allowed a deeper exploration of latent semantic patterns in the reports and facilitated comparison with international non-financial disclosure standards (GRI, SASB, ESRS, etc.).

After  $S1$  and  $S2$  had been computed for each bank, the overall ESG Maturity Index was calculated as a simple average:

$$ESG \text{ Maturity Index} = \frac{S1 + S2}{2}. \quad (3)$$

This composite index represents an aggregate measure of the bank's ESG disclosure maturity across both website-based and report-based communications, where 0% indicates that a bank does not disclose any information about its ESG practices and is not ESG mature; 100% indicates the highest level of ESG disclosure and maturity. An implicit assumption in this approach is that ESG disclosure reflects its implementation; that is, if a bank engages more fully with ESG, it is likely to disclose more. It is recognized that disclosure is not a perfect proxy for actual ESG performance; a bank might report extensively on ESG with minimal real action, or conversely under-report its initiatives. Nonetheless, transparent disclosure is a prerequisite for stakeholders to assess and trust a bank's ESG efforts.

Finally, basic statistical analysis was applied to interpret the index results. Descriptive statistics (means, medians, standard deviations) and comparative analysis across the three ownership categories of banks were used.

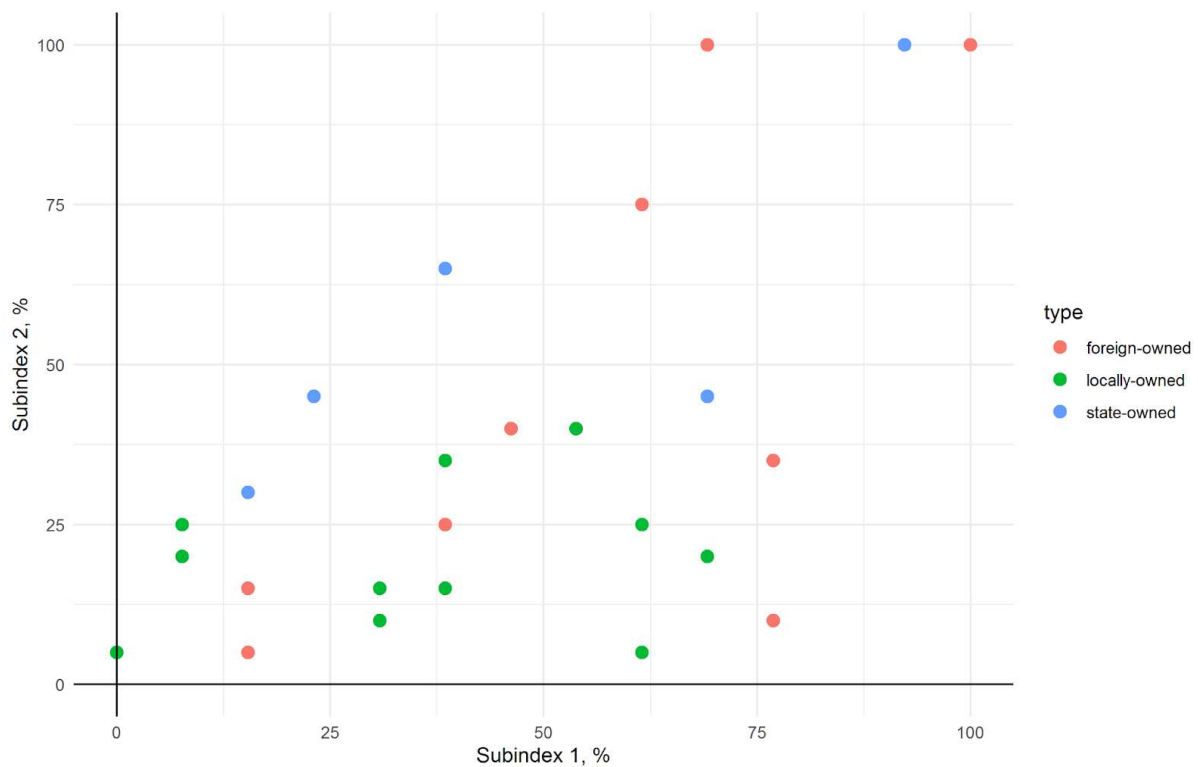
The proposed evaluation framework takes into account the bank's strategic vision on sustainability and ESG practices (availability of strategies or policies), disclosure of information on the website, and ESG reporting. Thus, the ESG maturity index enables the analysis of the level of ESG practices implementation in Ukrainian banks, to compare their readiness for ESG reporting in terms of integration into the requirements of European financial regulation, information transparency, and disclosure practices concerning ESG and sustainability. In the absence of standardized ESG ratings for many Ukrainian banks (most are not publicly listed and therefore not tracked by global rating agencies), the bespoke index provides a needed empirical basis for comparing ESG orientation.

The study is based on the following key assumptions. First, ESG practices of the majority of the Ukrainian banks are expected to have a low or medium-low level of maturity, given the early stage of ESG regulatory framework development in the country and the impact of the ongoing war. Second, it is assumed that foreign-owned banks will demonstrate higher ESG practices maturity compared to state-owned or domestically owned institutions, due to the influence of parent companies' international standards and experience. Third, a positive relationship is anticipated between the size of a bank's assets and the maturity of its ESG practices, reflecting greater institutional capacity and stakeholder pressure in larger financial institutions.

### 3. RESULTS

The empirical analysis demonstrates different levels of ESG practices implementation and disclosure in banks' information resources, including annual statements (Figure 1).

As depicted in Figure 1, Sub-index 1 (Index of Bank's Strategic ESG Implementation Disclosure) deviation demonstrates that most banks have



**Figure 1.** Ukrainian banks' ESG Maturity Sub-index 1 vs Sub-index 2

low or medium scores. It proves that at the current stage, banks do not appropriately represent their ESG activities. Notably, Sub-index 2 (Index of Strategic ESG Orientation Disclosure in the Bank's Annual Reports) is lower than 50% for most analyzed banks. At the same time, some banks have the same results and are represented as a single point on the graph. For example, four banks demonstrate 100% for both indices, in particular, 3 foreign-owned and one locally-owned bank.

The study has revealed significant variability in ESG maturity levels (Appendix B). The results show no statistically significant relationship between the ESG Maturity Index and the size of the banks measured by total assets (Figure 2).

Banks with both high and low levels of ESG maturity were observed across different asset categories. Institutions exhibiting different levels of ESG disclosure were identified across all asset size categories, indicating that the scale of operations is not a decisive factor in determining ESG maturity. It is worth noting that the vast majority of locally-

owned banks are characterized by a low level of assets and an ESG Maturity Index value that does not exceed 50%. At the same time, all representatives of the group of state-owned banks have common characteristics, namely a high level of capitalization and a higher level of ESG maturity compared to most of the analyzed banks of other groups.

Conducted analysis (Table 2) demonstrates that there is no influence of a bank's asset size on its ESG maturity level.

The regression analysis demonstrates no statistically significant relationship between the independent variable ( $x$  – Assets) and the dependent variable ( $y$  – ESG Maturity Index). The coefficient for the independent variable is effectively zero and not statistically significant ( $p = 0.76$ ). The model explains only 0.3% of the variance in the dependent variable ( $R^2 = 0.003$ , Adjusted  $R^2 = -0.032$ ). The  $F$ -test ( $F = 0.092$ ;  $p = 0.764$ ) also indicates that the model does not provide a significant improvement over a simple mean. Therefore, the independent variable does not significantly contribute to explaining the variation in the dependent vari-

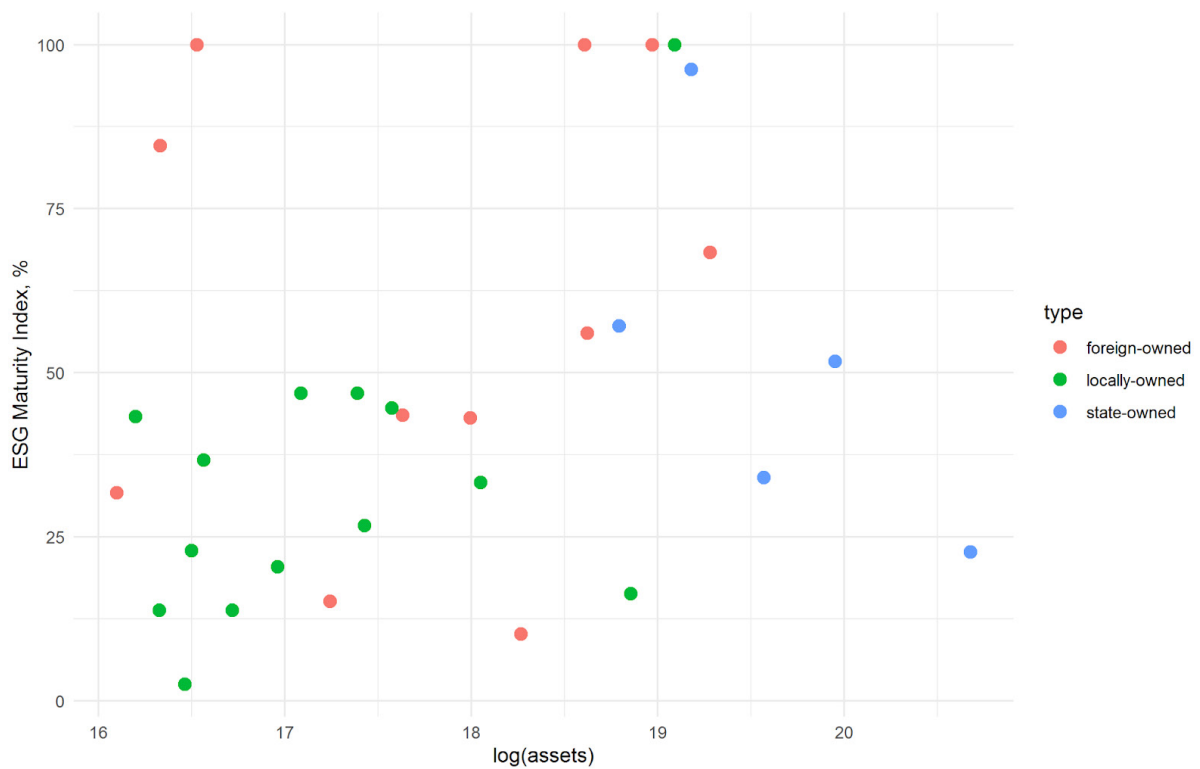


Figure 2. Ukrainian banks’ ESG Maturity Index vs Logarithm of assets

Table 2. Direct effects using linear regression

Regression Statistics	
Multiple R	0.057231
R Squared	0.003275
Adjusted R Squared	-0.03232
Standard Error	30.55752
Observations	30

ANOVA					
	df	SS	MS	F	Significance F
Regression	1	85.91733	85.91733	0.092012041	0.763877141
Residual	28	26145.33	933.7618		
Total	29	26231.25			

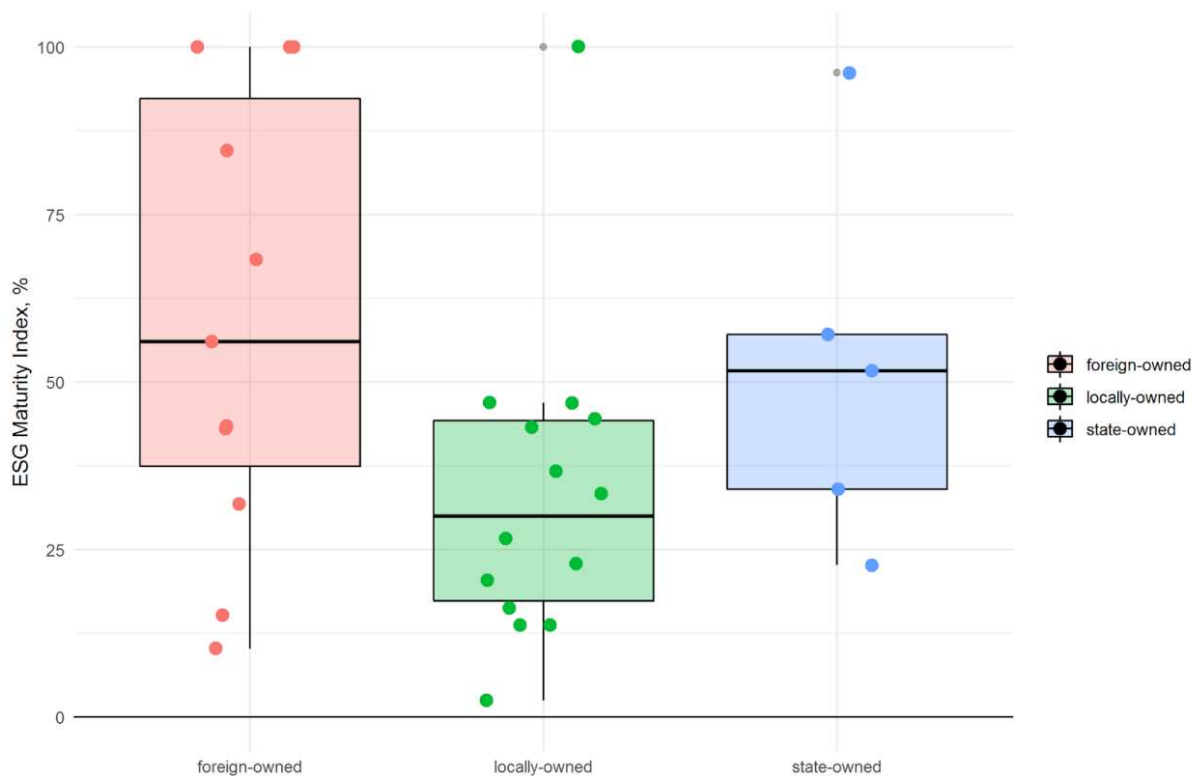
  

Coefficients								
	Coefficients	Standard Error	t Stat	P-value	Lower 95%	Upper 95%	Lower 95.0%	Upper 95.0%
Intercept	44.97	6.67	6.74	0.00	31.30	58.64	31.30	58.64
X Variable 1	0.00	0.00	0.30	0.76	0.00	0.00	0.00	0.00

able in this sample. It means the assumption that a positive relationship is anticipated between the size of a bank’s assets and the maturity of its ESG practices is not proven.

Conversely, the ownership type of banks demonstrated a more notable relationship with ESG maturity levels (Figure 3).

A significant relationship was observed between the ESG Maturity Index and the type of bank ownership. Banks with foreign ownership exhibited the highest average ESG Maturity Index, followed by state-owned banks, while banks with predominantly domestic capital generally displayed lower levels of ESG disclosure and strategic integration. Descriptive statistics presented in Table 3 show



**Figure 3.** Distribution of ESG Maturity Index by type of bank ownership

that banks owned by foreign-owned banks demonstrate the highest average ESG Maturity Index (62.66%) compared to state-owned (52.34%) and locally-owned banks (32.29%).

The median values generally align with the means, suggesting a relatively symmetric distribution within each ownership type, particularly among state-owned and privately-owned banks. However, the standard deviation values indicate considerable heterogeneity within each group, especially among banks owned by foreign banking groups ( $SD = 32.37$ ), implying that despite the high average, the ESG maturity level among these banks varies significantly.

Locally-owned banks not only have the lowest average ESG Maturity Index but also exhibit a relatively high variability ( $SD = 24.01$ ), reflecting in-

consistencies in ESG disclosure practices among domestic banks.

Almost half of foreign-owned banks reported high or perfect ESG Maturity Index scores. In particular, three banks reached 100%. At the same time, two representatives of this group demonstrated scores less than 30%. Nevertheless, exceptions to these general trends were evident within each ownership group.

Among locally-owned banks, the ESG Maturity Index is generally lower, although notable exceptions exist. For instance, a single locally-owned bank achieved a high ESG Maturity Index score of 100%, significantly outperforming many peers across all ownership groups. Six banks, that is 43%, demonstrate scores of more than 33%. On the other hand, half of the analyzed privately owned

**Table 3.** ESG Maturity Index: Descriptive statistics

Ownership type	Number of banks	Mean ESG Maturity Index (%)	Median ESG Maturity Index (%)	Standard Deviation (SD)
Foreign-owned banks	11	62.66%	56.00%	32.37
State-owned banks	5	52.34%	51.70%	26.58
Locally-owned banks	14	32.29%	33.30%	24.01

**Table 4.** Matrix of ESG Maturity Index category dependence on bank types by ownership

ESG Maturity Index level		Number of banks by ownership type		
		Locally-owned banks	State-owned banks	Foreign-owned banks
High level of ESG Maturity Index	ESG MI > 66%	1	1	5
Medium level of ESG Maturity Index	66% >= ESG MI > 33%	6	3	3
Low level of ESG Maturity Index	33% >= ESG MI	7	1	3

banks reported some of the lowest ESG maturity levels, ranging below 33%.

Similarly, within the state-owned segment, the sample included both leading performers in ESG transparency and banks with comparatively lower ESG Maturity Index scores (Table 4).

Furthermore, heterogeneity within each ownership group was observed. Even among foreign banks, ESG maturity levels varied significantly; some banks reported high scores, while several other banks demonstrated low levels of ESG maturity, such as 10.2% and 15.2%.

Thus, while ownership type appears to be an important factor influencing ESG maturity, it does not fully determine ESG performance, and individual bank-level factors also play a substantial role.

## 4. DISCUSSION

The results of this study provide a comparative perspective on the level of ESG maturity among Ukrainian banks, highlighting areas of strength and gaps in transparency practices. The level of strategic ESG implementation disclosure is low or medium for most banks. Some banks do not fully disclose their ESG practices and publish documents in this sphere on their official websites, even if they have some positive experience. In this direction, foreign-owned banks are leading. When discussing the disclosure of strategic ESG orientation in the bank's annual reports, it is evident that most banks do not provide non-financial reports and often overlook sustainable practices in their annual statements. Leading banks that demonstrate a high level of strategic ESG orientation disclosure in annual reports belong, in most cases, to foreign-owned banks. It is caused by the lack of requirements for ESG disclosure in Ukraine.

Research proves that regulation has a vital role in implementing ESG reporting and increasing standards of disclosure.

Ukrainian banks' ESG practices and disclosures are still maturing, with a low (less than 33%) or medium (from 33 to 66%) level of ESG maturity index. The most mature banks in Ukraine in the field of ESG implementation are foreign-owned banks. This shows that the experience of foreign owners, especially European banking groups, plays a positive role in the transformation of business models into more sustainable and ESG-oriented ones. These results align with Kouzez et al. (2024), who suggested that a greater focus on ESG activities appears to improve performance exclusively among foreign-owned banks, indicating that such investments are particularly valuable for these institutions. The highlighted results also correlate with Dam and Scholtens' (2012) study on Chinese companies, which found that firms controlled by the state or with higher foreign ownership tend to disclose significantly more extensive and higher-quality CSR information than purely private firms. By prioritizing ESG initiatives, foreign banks can strengthen their credibility in international markets and bolster their global reputation. Therefore, there is an interconnectedness of foreign ownership and a bank's ESG maturity in Ukraine, as in other emerging economies.

It is notable that 50% of locally-owned banks demonstrate a low ESG maturity level, while 42% have a medium ESG maturity, and only 8% show the best results. At the same time, most state-owned banks show medium ESG maturity. These results underline that the business models of most banks need to be changed in terms of ESG implementation in order to create competitive advantages in the market. It is crucial in modern conditions of the transformation of the economy into a more sustainable one, especially for the recovery of the Ukrainian economy.

Research proves no correlation between a bank's asset size and its ESG maturity. At the same time, in many countries, larger banks have been found to lead on sustainability reporting – likely due to greater resources and scrutiny. For example, Ng (2016) reported that bank size is positively related to the scope of ESG disclosures, with big banks typically addressing more environmental and social policies than smaller banks. The absence of the above-mentioned correlation in the research suggests that having more assets or resources has not automatically influenced better ESG performance in Ukraine. This discrepancy could reflect the early stage of ESG adoption in the country: even the largest banks are only beginning to formalize sustainability strategies, so the usual advantages of scale are not yet evident.

Prior studies in other emerging markets have noted that sustainability reporting practices can be inconsistent during initial implementation phases (Kustono, 2021). In environments with weak regulatory enforcement and lower investor or public pressure, even big institutions may lag in ESG engagement (Ng, 2016). Ukraine's banking sector in the period studied had voluntary ESG disclosure norms and minimal mandatory requirements, which might explain why a large and a mid-sized bank could end up with similar ESG maturity scores.

Globally, implementing ESG principles in banking has moved from a niche concern to a mainstream component of evaluating banks' maturity and performance. Banks worldwide are increasingly measured not just on financial metrics but on how well they manage environmental risks, contribute to social goals, and uphold strong governance (Chiaramonte et al., 2022; Vakhovych et al., 2023). Emerging market banks have less developed ESG disclosure practices, largely due to the later adoption of sustainability practices and fewer disclosure requirements (Lavin & Montecinos-Pearce, 2021). Overall, the current study reveals that Ukrainian banks share many characteristics with other emerging markets: ESG reporting is currently nascent and less standardized, but it is poised to evolve under both external influences and domestic reforms.

The study represents a brand new approach and findings on the ESG practices maturity of the largest Ukrainian banks. Unlike the model proposed

by Gai et al. (2023), this analysis seeks to assess the information disclosure practices of banks that do not yet collect detailed and comparable data according to ESG criteria. This is particularly relevant in many developing countries, including Ukraine, where formalized frameworks for such non-financial reporting have not yet been established. However, the research has some limitations.

First, the investigation was conducted on the data available at banks' official websites, and it influenced the choice of indicators used for the analysis. Except that most Ukrainian banks are not listed on stock exchanges, so existing methodologies provided by international rating agencies for ESG maturity assessment could not be used. This limitation was the primary driver behind the development of our unique ESG maturity assessment framework and methodology for Ukrainian banks. Geographic limitation means that the study is concerned only with the Ukrainian banking system. In further research, our approach can be used for the assessment of ESG implementation and disclosure for the analysis of banking systems in other countries with predominantly non-listed banks. The international dimension will enable comparative regional analysis and benchmarking.

The next limitation is the sector that was analyzed. The study focuses on the ESG maturity of Ukrainian banks and can be extended in the future by analyzing other financial institutions, particularly their ESG implementation and disclosure of these practices. It could be useful for the comparison of the ESG maturity of different players in the financial ecosystem.

For further research, statistical tests could be applied to examine potential correlations between ESG maturity and financial indicators such as profitability, return on equity, return on assets, liquidity ratios, solvency ratios, market value, regulatory compliance, etc. It will help assess the impact of the bank's ESG orientation on its performance.

Furthermore, although the primary focus of this study was not to evaluate the direct consequences of the war on Ukraine's banking sector, it is essential to acknowledge that the full-scale military invasion has created an extraordinary operating environment that affects the implementa-

tion and disclosure of ESG practices. Despite the ongoing presence of existential risks, Ukrainian banks have not discontinued ESG reporting; in fact, some have voluntarily expanded it even under martial law, as confirmed by the findings of Makarenko et al. (2024). However, the full-scale

war has led to disruptions in ESG data disclosure, as many banks publish only abridged reports, update existing information infrequently, or fail to report at all. This supports the view that voluntary ESG reporting is insufficient and highlights the need for corresponding regulatory support.

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## CONCLUSION

The purpose of this study was to identify the level of environmental, social, and governance practices development in Ukraine's largest banks. It was found that the average ESG Maturity Index across the sample is 46.8%, meaning that slightly less than half of the information that a fully transparent bank would disclose is currently available to stakeholders. It shows that most Ukrainian banks have a low or medium level of ESG practices maturity.

Ownership structure proved to be the critical determinant of maturity: foreign-owned banks score on average 62.7%, state-owned banks 52.3%, and locally-owned banks only 32.3%. These findings point to a pronounced "implementation-communication" gap that could complicate the sector's forthcoming alignment with EU sustainability directives.

A positive relationship between the size of a bank's assets and the maturity of its ESG practices has not been proven. This demonstrates that even large and systemically important banks do not necessarily provide a high level of ESG practices maturity and disclosure.

The main practical challenge for Ukraine's banking system is to accelerate ESG integration and disclosure so that policies, risk models, and public reporting meet the standards expected under the Corporate Sustainability Reporting Directive and related EU regulations. Meeting this challenge will help banks attract green finance for post-war economic and social recovery, improve stakeholder trust, and mitigate reputational risks. The index developed in this study can serve regulators, investors, and bank management as a diagnostic tool for monitoring progress, prioritizing supervisory engagement, and allocating technical assistance.

Prospects for further research include linking the ESG Maturity Index to banks' financial and risk indicators to quantify the economic payoff of enhanced transparency. Second is validating the framework with third-party assurance data to detect possible green- or social-washing. Third is extending the methodology to peer banking systems in Central and Eastern Europe to benchmark Ukraine's convergence with international best practice on the one hand and to the financial ecosystem of Ukraine on the other hand to assess ESG maturity of non-banking intermediaries and fintechs.

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## APPENDIX A

**Table A1.** Characteristics of the bank sample for the content analysis (January 1, 2025)

No.	Bank Name	Form of Ownership	Systemically Important	Assets, million UAH
1	JSC CB 'PrivatBank'	State-owned	Yes	956,714.2
2	JSC 'Oschadbank'	State-owned	Yes	462,560.5
3	JSC 'Ukreximbank'	State-owned	Yes	315,549.4
4	JSC 'Raiffeisen Bank'	Foreign-owned	Yes	236,317.5
5	JSB 'UkrGasbank'	State-owned	Yes	213,720.9
6	JSC 'PUMB'	Locally-owned	Yes	195,762.7
7	JSC 'UkrSibbank'	Foreign-owned	Yes	173,305.5
8	JSC 'Universal Bank'	Locally-owned	Yes	154,417.0
9	JSC 'Sense Bank'	State-owned	Yes	145,141.3
10	JSC 'Crédit Agricole Bank'	Foreign-owned	Yes	122,570.8
11	JSC 'OTP Bank'	Foreign-owned	Yes	120,820.3
12	JSC 'Citibank'	Foreign-owned	No	85,825.4
13	PJSC 'Bank Pivdenny'	Locally-owned	Yes	69,177.7
14	JSC 'KredoBank'	Foreign-owned	Yes	65,376.7
15	JSC 'ProCredit Bank'	Foreign-owned	No	45,427.7
16	JSC 'Tascombank'	Locally-owned	Yes	42,880.8
17	JSC 'A-Bank'	Locally-owned	Yes	37,079.4
18	PJSC 'Bank Vostok'	Locally-owned	No	35,695.2
19	JSC 'ING Bank Ukraine'	Foreign-owned	No	30,802.2
20	JSC 'Bank Credit Dnipro'	Locally-owned	No	26,337.7
21	PJSC 'MTB Bank'	Locally-owned	No	23,253.2
22	PJSC CB 'Acordbank'	Locally-owned	No	18,234.9
23	JSC 'CB Globus'	Locally-owned	No	15,632.8
24	JSC JCB 'Lviv'	Foreign-owned	No	15,105.4
25	JSC 'Bank Alliance'	Locally-owned	No	14,651.3
26	JSC 'MIB'	Locally-owned	No	14,141.6
27	JSC 'PRAVEX BANK'	Foreign-owned	No	12,384.3
28	JSC 'Idea Bank'	Locally-owned	No	12,329.4
29	JSB 'Radabank'	Locally-owned	No	10,847.2
30	JSC 'SEB Corporate Bank'	Foreign-owned	No	9,802.6

## APPENDIX B

**Table B1.** Ukrainian banks' ESG Maturity Index Matrix

Bank's number	Ownership type	ESG Maturity Index, %	Subindex 1, %	Subindex 2, %
6	Locally-owned	100.0	100.0	100.0
7	Foreign-owned	100.0	100.0	100.0
11	Foreign-owned	100.0	100.0	100.0
24	Foreign-owned	100.0	100.0	100.0
5	State-owned	96.2	92.3	100.0
27	Foreign-owned	84.6	69.2	100.0
4	Foreign-owned	68.3	61.5	75.0
9	State-owned	57.1	69.2	45.0
10	Foreign-owned	56.0	76.9	35.0
2	State-owned	51.7	38.5	65.0
18	Locally-owned	46.9	53.8	40.0
20	Locally-owned	46.9	53.8	40.0
16	Locally-owned	44.6	69.2	20.0
15	Foreign-owned	43.5	76.9	10.0
29	Locally-owned	43.3	61.5	25.0
14	Foreign-owned	43.1	46.2	40.0
23	Locally-owned	36.7	38.5	35.0
3	State-owned	34.0	23.1	45.0
13	Locally-owned	33.3	61.5	5.0
30	Foreign-owned	31.7	38.5	25.0
17	Locally-owned	26.7	38.5	15.0
25	Locally-owned	22.9	30.8	15.0
1	State-owned	22.7	15.4	30.0
21	Locally-owned	20.4	30.8	10.0
8	Locally-owned	16.3	7.7	25.0
19	Foreign-owned	15.2	15.4	15.0
22	Locally-owned	13.8	7.7	20.0
28	Locally-owned	13.8	7.7	20.0
12	Foreign-owned	10.2	15.4	5.0
26	Locally-owned	2.5	0.0	5.0