

“The effects of ESG controversies and women on boards on ESG-washing behavior: Global evidence from the banking industry”

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THE EFFECTS OF ESG CONTROVERSIES AND WOMEN ON BOARDS ON ESG-WASHING BEHAVIOR: GLOBAL EVIDENCE FROM THE BANKING INDUSTRY

Abstract

This study analyzes the effects of environmental, social, and governance (ESG) controversies and the presence of women on boards on ESG-washing practices in the global banking sector. ESG washing is a manipulative practice in ESG disclosure where companies highlight positive information to conceal poor sustainability performance. This study employs a panel dataset from 279 public banks in 67 countries, covering five major regions – Asia, Europe, Africa, America, and Oceania – over the period 2011 to 2023. Data were obtained from Refinitiv Eikon and Bloomberg for bank-level information, as well as the World Bank for macroeconomic data. The results show that ESG controversies significantly drive ESG washing. Banks involved in controversies tend to use manipulative ESG disclosures to protect their reputation and mitigate the impact of scandals. Conversely, the presence of women on the board has a significant mitigating effect on ESG washing. This study also identifies a critical mass effect, where the positive influence of women on boards in reducing ESG washing becomes optimal when their representation reaches a certain level. These findings have important implications for policymakers and regulators to promote inclusive governance and sustainability transparency, particularly through increasing gender diversity on boards of directors. Furthermore, these results indicate that good governance, supported by adequate representation of women, can help combat unethical practices such as ESG washing in the global banking sector.

Keywords sustainability practices, corporate governance, gender diversity, ethical behavior, banking sector

JEL Classification G30, J16, G21, M14

INTRODUCTION

Environmental, Social, and Governance (ESG) practices have become a focal point in corporate agendas, driven by escalating stakeholder demands for responsible and sustainable business conduct. In response, regulatory bodies, including central banks and industry associations across various nations, have actively promoted sustainable finance initiatives, notably through the establishment of the Sustainable Banking and Finance Network (SBFN). This network seeks to advance sustainable finance practices and align them with national development priorities (Dikau & Volz, 2021; Setyowati, 2023).

Despite these advancements, major global banks continue to engage with ESG controversies, raising concerns about their genuine commitment to sustainability. High-profile institutions such as Wells Fargo, HSBC, and Deutsche Bank have faced regulatory scrutiny and penalties for misreporting ESG metrics and financing projects that contradict their stated environmental goals. These incidents highlight the



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persistent issue of ESG washing, where companies exaggerate or misrepresent their sustainability efforts to bolster public perception. The prevalence of ESG washing in the banking sector underscores weaknesses in corporate governance and emphasizes the need for robust mechanisms to verify sustainability claims (Huang & Li, 2024).

Corporate governance plays a pivotal role in curbing unethical practices like ESG washing. One promising strategy to strengthen governance is enhancing gender diversity on corporate boards. Women bring unique perspectives and a collaborative approach to governance, contributing to more balanced decision-making (Issa & Hanaysha, 2023). To encourage female board representation, several countries, including Austria, France, and Norway, have implemented gender quota laws promoting inclusivity in both the public and private sectors. A 2023 Deloitte survey reported a 20% increase in women holding board positions in 2022, a trend supported by a similar MSCI survey. Further, Deloitte's 2024 survey highlighted significant growth in female representation on boards, particularly in the banking sector. These developments suggest a growing recognition of the value of gender diversity in fostering inclusive and sustainable business practices. Research increasingly shows that women contribute significantly to advancing sustainability practices. Women are more likely to prioritize environmental, social, and ethical concerns, demonstrate a strong commitment to stakeholder interests, and act as safeguards against unethical behavior (Adams, 2016; Agnese et al., 2023; Agustina & Barokah, 2024; Ain et al., 2022; Galletta et al., 2022; Issa & Zaid, 2021; Zahid et al., 2023; Zhang, 2023).

While prior studies have examined how ESG controversies affect bank performance, risk-taking, and sustainable investment, few have focused on their influence on ESG washing practices (Agnese et al., 2024; Barkemeyer et al., 2023; Elamer & Boulhaga, 2024; Jucá et al., 2024; Xue et al., 2023). Similarly, although evidence suggests that gender diversity on boards can enhance sustainability performance, limited research explores how women on boards impact ESG washing within the banking sector (Arayssi et al., 2020; Cambrea et al., 2023, 2023; Issa & Hanaysha, 2023; Shakil et al., 2020). This study aims to investigate the impact of ESG controversies and women on boards on ESG washing in the global banking sector.

1. LITERATURE REVIEW AND HYPOTHESES DEVELOPMENT

Greenwashing refers to the deceptive practices companies use to project a false image of environmental responsibility (Yu et al., 2020). Companies often selectively disclose positive environmental information while obscuring negative aspects, creating a misleading impression of their true environmental impact. The primary goal of greenwashing is to enhance corporate image and attract environmentally conscious investors and consumers, even when the company does not genuinely engage in sustainable practices (Liu et al., 2023). Birindelli et al. (2024) describe greenwashing as a disparity between a company's disclosed environmental information and its actual environmental performance.

Building on this concept, ESG washing is defined as the excessive promotion of positive claims about a company's Environmental, Social, and Governance (ESG) practices despite underwhelming performance in these areas. This deceptive practice misleads consumers, investors, and stakeholders regarding the ESG merits of a company's actions, products, or services. The goal is to improve public perception or market standing without genuine sustainability efforts. ESG washing is characterized by a significant gap between actual ESG performance and the quantity of disclosed ESG information, often involving manipulated disclosures to inflate market valuation (Chen & Dagestani, 2023).

ESG controversies arise when a company's products or operations generate events or practices that may harm its reputation by negatively impacting environmental, social, or governance dimensions.

These controversies often result in lawsuits, fines, legal disputes, and adverse media coverage, which can tarnish the company's image and financial standing. Research shows that negative publicity tends to have more severe repercussions for companies than positive coverage (Agnese et al., 2024; Jucá et al., 2024).

Stakeholder theory posits that companies engage in ESG practices not only to maximize shareholder value but also to achieve broader societal objectives, reduce managerial opportunism, and enhance their reputation. Stakeholders' perceptions of a company—both positive and negative—play a crucial role in shaping its image and performance (Nirino et al., 2021). Negative perceptions, particularly in public companies, can lead to legal, financial, and reputational damage, as markets often overreact to adverse information (Aouadi & Marsat, 2018; Galletta & Mazzù, 2023).

To mitigate the reputational damage caused by ESG controversies, companies frequently resort to ESG washing practices. During periods of social scandals, moral disputes, or other damaging events, firms often increase ESG disclosures to counterbalance the negative impact (Elamer & Boulhaga, 2024; Veeravel et al., 2024). For example, Li et al. (2019) found that companies strategically employ symbolic rather than substantive Corporate Social Responsibility (CSR) initiatives to repair reputational damage after controversies. In the same vein, Huang et al. (2024) demonstrated that banks attempt to enhance their image and reputation by engaging in ESG-washing practices, specifically through funding companies with superior ESG performance.

This study also explores the influence of women on boards (WOB) in mitigating ESG washing, employing multiple theoretical frameworks to provide a comprehensive understanding of this relationship (Khatib et al., 2021).

Social expectations and gender stereotypes suggest that men and women exhibit different traits and behaviors, with women often perceived as more ethical, empathetic, and community-oriented than men (Adams, 2016). Biosocial constructionist theory argues that biological and social factors interact and evolve, shaping gender-based behavioral differences. Enhanced access to edu-

cation and societal movements advocating for gender equality have challenged traditional gender roles, leading to increased gender diversity on corporate boards (Agustina & Barokah, 2024; Connolly et al., 2020).

Women on boards often align with ethical and pro-social values, supporting sustainability initiatives and resisting unethical practices. Their unique perspectives and qualifications contribute to a company's competitive edge (Cambrea et al., 2023; Paolone et al., 2024; Shakil et al., 2020). Harjoto and Wang (2020) also highlight that gender diversity significantly enhances corporate sustainability practices.

From the perspective of upper echelons theory, the experiences, cognitive frameworks, and values of top executives—including female directors—directly shape strategic decisions and ESG performance (Birindelli et al., 2019). Female directors' diverse perspectives improve decision-making and enhance sustainability outcomes (Khatiri, 2023; Naveed et al., 2021; Orazalin & Baydauletov, 2020). Additionally, agency theory emphasizes that women's pro-social and ethical orientation can reduce conflicts of interest between management and stakeholders, fostering transparency and addressing agency problems (Arayakarnkul et al., 2022; García-Meca et al., 2018).

Empirical studies further support the role of women on boards in mitigating ESG washing. For example, Venturelli et al. (2024) found that female representation on boards reduces social washing in the banking sector. Similarly, Zahid et al. (2023) demonstrated that women on boards enhance environmental performance, encourage accurate ESG disclosures, and curb greenwashing behavior.

Based on the literature, this study aims to investigate the impact of ESG controversies and the representation of women on boards on ESG washing in the global banking industry. Accordingly, the following research hypotheses are proposed:

- H1: ESG controversies are positively associated with ESG washing.*
- H2: Women on boards are negatively associated with ESG washing.*

2. METHOD

2.1. Data and sample

This study examines the impact of ESG controversies and women on boards (WOB) on ESG-washing activities in the global banking sector. This sector was selected due to its pivotal role in promoting sustainability practices, particularly in supporting sustainable investment financing, its highly regulated environment, and its sensitivity to ethical issues. Moreover, from a gender equity perspective, the banking sector demonstrates significant gender diversity compared to other industries (Deloitte, 2024).

The data for this study were sourced from three primary databases: Refinitiv Eikon and Bloomberg databases for bank-level information, and the World Bank database for macroeconomic data. The initial dataset includes 764 publicly listed banks from 67 countries over 13 years (2011–2023) across five regions: Asia, Europe, Africa, the Americas, and Oceania. A meticulous data cleaning process was undertaken, excluding banks that lacked ESG disclosure or ESG performance scores, as these metrics are critical for estimating ESG washing. Following this process, the final sample included 279 banks across the designated regions. To mitigate the impact of outliers, all variables were winsorized at the 1st and 99th percentiles, ensuring robust and reliable analysis.

2.2. Variable measurements

The dependent variable assessed was ESG washing, using a peer-relative greenwashing score developed by Yu et al. (2020). This variable is calculated as a normalized measure representing the company's position relative to its peers in the distribution of ESG disclosure scores (Bloomberg), minus the normalized measure of the company's position relative to its peers in the distribution of ESG performance scores (Refinitiv). Both ESG disclosure and performance scores are normalized to ensure they are on the same scale. Each component of ESG washing, including greenwashing, social washing, and governance washing, is similarly estimated using this proxy.

The Bloomberg ESG disclosure score evaluates the extent to which a company publicly discloses ESG data, focusing on the quantity of information without assessing actual ESG performance.

This score includes all ESG information disclosed by the company, both positive and negative, to ensure a comprehensive evaluation. Conversely, the Refinitiv ESG performance score assesses a company's performance across ESG pillars, with scores ranging from 0 to 100, where higher values indicate better ESG performance.

The independent variables, ESG controversies and women on boards (WOB), represent a bank's exposure to globally reported environmental, social, and governance controversies (Agnese et al., 2024; Brinette et al., 2024) and the level of gender diversity on the bank's board, indicating gender inclusivity. ESG controversies were measured using the ESG controversy score, while WOB was estimated as the ratio of women on the board to the total board size.

To mitigate variable bias, various control variables were incorporated, including CEO duality, board size, board structure type, independent directors, CSR committee, GCG committee, return on assets, total assets, and debt-to-equity ratio for bank-level variables. At the country level, regulatory quality, inflation, and gross domestic product were included (see Appendix A, Table A1).

To examine the impact of ESG controversies and WOB on ESG washing, unbalanced panel data analysis was conducted using a fixed-effects model after comparing the model with the ordinary least squares (OLS) and random-effects (RE) models using the Breusch-Pagan Lagrange multiplier (LM) and Hausman tests. Clustered standard errors at the bank level were taken into account. The following equations were estimated to empirically examine the relationships among ESG controversies, WOB, and ESG-washing practices:

$$esgswash_{i,t} = \beta_0 + \beta_1 esgcs_{i,t} + \beta_2 control_{i,j,t} + \beta_3 bank_i + \beta_4 country_j + \beta_5 year_t + \varepsilon_{it}, \quad (1)$$

$$esgswash_{i,t} = \beta_0 + \beta_1 wob_{i,t} + \beta_2 control_{i,j,t} + \beta_3 bank_i + \beta_4 country_j + \beta_5 year_t + \varepsilon_{it}, \quad (2)$$

$$esgswash_{i,t} = \beta_0 + \beta_1 esgcs_{i,t} + \beta_2 wob_{i,t} + \beta_3 control_{i,j,t} + \beta_5 bank_i + \beta_6 country_j + \beta_7 year_t + \varepsilon_{it}, \quad (3)$$

where i and t represent bank i and year t , respectively. **ESG washing** was calculated by subtracting normalized ESG disclosure scores from normalized ESG performance scores. Following Yu et al. (2020), a positive ESG washing score suggests that a bank's ESG disclosure exceeds its actual performance, which may indicate an attempt to obscure weak ESG outcomes through extensive reporting. Conversely, a negative ESG washing score implies that a bank discloses less ESG information relative to its actual ESG performance, which may suggest a tendency to understate its ESG accomplishment to avoid negative market reactions. The key independent variables, ESG controversies (*esgcs*) and women on boards (*wob*), were measured using ESG controversy scores and the percentage of women on the board relative to total board size, respectively. Control variables included bank-level factors (e.g., CEO duality, board size, board structure type, independent directors, CSR committee, GCG committee, return on assets, total assets, and debt-to-equity ratio) and country-level factors (e.g., regulatory quality, inflation, and GDP). Additionally, we controlled for fixed effects at the bank, year, and country levels.

3. RESULTS

3.1. Descriptive statistics

Tables B12 and C1 (see Appendices B and C) present the descriptive statistics for the main and control variables, along with the pairwise correlations. The average value of ESG washing (*esgwash*) is 0.334, indicating that banks in the sample engage to some extent in ESG-washing practices. The ESG controversies score (*esgsc*), which measures a bank's ESG-related controversies, has an average of 92.02%. This relatively high score suggests that the banks in the sample experience low ESG controversies, reflecting fewer scandals or unethical issues reported by the media regarding their sustainability performance.

Regarding gender diversity, the average representation of women on boards is 17.61%, highlighting the persistent underrepresentation of women in leadership roles within the banking sector.

The correlation analysis reveals a negative correlation between ESG controversies, women on

boards, and ESG washing. Notably, all correlations between the independent variables are below 0.5, indicating that multicollinearity is not a concern in the model.

3.2. Regression analysis

Further examination was conducted to determine whether ESG controversy scores negatively influence a bank's ESG washing practices. Table 1 presents the results of a statistical analysis testing the relationship between ESG controversies and ESG washing. The estimation results confirm a negative and significant effect of ESG controversies on ESG washing behavior ($\beta_1 = -0.003$, $p < 0.10$ for model 1; $\beta_1 = -0.003$, $p < 0.05$ for model 3). Specifically, a one-unit increase in the ESG controversies score is associated with a 0.003-unit decrease in the bank's ESG washing score. This significant coefficient supports Hypothesis 1, indicating that higher ESG controversy scores—reflecting fewer scandals or reduced exposure to controversies—are linked to lower ESG washing practices. Conversely, the findings suggest that banks facing ESG scandals or controversies may engage in ESG-washing activities to obscure the negative implications of these incidents and protect their reputation.

Table 1. Baseline results

Variables	(Model 1)	(Model 2)	(Model 3)
	<i>esgwash</i>	<i>esgwash</i>	<i>esgwash</i>
<i>esgcs</i>	-0.003* (0.002)	-	-0.003** (0.002)
<i>wob</i>	-	-0.021*** (0.005)	-0.021*** (0.005)
<i>ceod</i>	0.399*** (0.130)	0.394*** (0.123)	0.388*** (0.123)
<i>bsize</i>	0.020 (0.017)	0.017 (0.016)	0.016 (0.016)
<i>indb</i>	-0.009*** (0.003)	-0.007** (0.003)	-0.006** (0.003)
<i>bst</i>	0.253*** (0.063)	0.213*** (0.061)	0.223*** (0.061)
<i>csrc</i>	-0.379*** (0.108)	-0.351*** (0.102)	-0.342*** (0.102)
<i>gcgc</i>	-0.145 (0.137)	-0.186 (0.149)	-0.182 (0.148)
<i>roa</i>	2.622 (6.705)	0.089 (6.730)	0.771 (6.684)
<i>lta</i>	-0.556** (0.271)	-0.478** (0.239)	-0.475** (0.237)
<i>dte</i>	0.073 (0.047)	0.047 (0.040)	0.054 (0.040)

Table 1 (cont.). Baseline results

Variables	(Model 1)	(Model 2)	(Model 3)
	esgwash	esgwash	esgwash
regq	0.462 (0.293)	0.327 (0.281)	0.386 (0.287)
inf	-0.005 (0.006)	-0.002 (0.005)	-0.002 (0.005)
gdp	-0.001 (0.008)	0.002 (0.009)	0.002 (0.009)
Constant	14.312** (6.827)	12.532** (5.982)	12.670** (5.934)
Observations	1,682	1,672	1,672
R-squared	0.107	0.129	0.131
Number of banks	279	279	279
Bank FE	Yes	Yes	Yes
Year FE	Yes	Yes	Yes
Country FE	Yes	Yes	Yes

Note: Robust standard errors are in parentheses. *** denotes $p < 0.01$, ** $p < 0.05$, and * $p < 0.1$.

Further analyzed the association between WOB and ESG washing. Table 1 presents the results, showing that the presence of women on corporate boards reduces the ESG washing scores ($\beta_2 = -0.021$, $p < 0.01$ for model 2; $\beta_2 = -0.021$, $p < 0.01$ for model 3). Specifically, a one-unit increase in the women on boards ratio is associated with a 0.021-unit decrease in ESG washing scores. This finding highlights the role of women on boards in preventing unethical sustainability practices. It aligns with prior research by (Zahid et al., 2023), which emphasized the critical role of WOB in combating greenwashing and promoting environmentally responsible practices.

Then, extend the analysis by referring to the critical mass theory (Cambrea et al., 2023; Khatri, 2023), testing the nonlinearity relationship between women on boards and ESG washing. The results, reported in Table 2, confirm the existence of a nonlinear association ($\beta_1 = -0.043$, $p < 0.01$; $\beta_2 = -0.001$, $p < 0.05$ for model 2). with the turning point being 21.5% ($0.043/(2 \times 0.001)$). This finding suggests that the negative effect of women on boards on ESG washing is most pronounced up to a representation of 21.5%. Beyond this threshold, the impact becomes positive, indicating that an overly imbalanced gender composition might reduce the effectiveness of women in curbing ESG washing. These results underline the importance of achieving a balanced representation of women on boards to fully harness their potential benefits in fostering ethical and transparent sustainability practices.

Table 2. Quadratic regression

Variables	(Model 1)	(Model 2)
	esgwash	esgwash
wob	-0.021*** (0.005)	-0.043*** (0.009)
wob ²	- (0.000)	0.001** (0.000)
ceod	0.394*** (0.123)	0.359*** (0.124)
bsize	0.017 (0.016)	0.021 (0.016)
indb	-0.007** (0.003)	-0.006* (0.003)
bst	0.213*** (0.061)	0.208*** (0.059)
csrc	-0.351*** (0.102)	-0.337*** (0.102)
gcgc	-0.186 (0.149)	-0.205 (0.151)
roa	0.089 (6.730)	0.595 (6.682)
lta	-0.478** (0.239)	-0.475** (0.236)
dte	0.047 (0.040)	0.054 (0.041)
regq	0.327 (0.281)	0.339 (0.285)
inf	-0.002 (0.005)	-0.004 (0.006)
gdp	0.002 (0.009)	0.002 (0.009)
Constant	12.532** (5.982)	12.481** (5.905)
Observations	1,672	1,672
R-squared	0.129	0.135
Number of Banks	279	279
Bank FE	Yes	Yes
Year FE	Yes	Yes
Country FE	Yes	Yes

Note: Robust standard errors are in parentheses. *** indicates $p < 0.01$, ** $p < 0.05$, and * $p < 0.1$.

3.3. Additional analysis

To ensure the robustness of the results, several additional tests were conducted. First, the ESG washing score was decomposed into three distinct pillars: greenwashing, social washing, and governance washing. Second, the potential endogeneity of the women on boards (WOB) variable was addressed using a two-stage least squares (2SLS) approach with instrumental variables. Finally, subsample analyses were performed based on country development status (developed vs. developing), bank size (large vs. small), and geographic location (US vs. non-US banks).

For the first robustness check, the results indicate that the negative effects of ESG controversies and women on boards on ESG washing remain consistent. However, this effect is particularly significant for governance washing, especially in the relationship between ESG controversies and ESG washing (Table 3). This finding is reasonable, as good governance is critical for managing intermediary activities effectively while ensuring transparency and accountability in the banking industry. In conclusion, these robustness checks affirm the main findings: ESG controversies may drive ESG washing, while the presence of women on boards mitigates this unethical practice.

Table 3. Robustness check by decomposing ESG washing pillars

Variable	esgwash	greenwash	swash	govwash
esgcs	-0.003** (0.002)	-0.000 (0.001)	-0.002 (0.001)	-0.003** (0.001)
wob	-0.021*** (0.005)	-0.010** (0.005)	-0.021*** (0.005)	-0.013*** (0.005)
ceod	0.388*** (0.123)	0.147 (0.117)	0.268** (0.131)	0.560*** (0.115)
bsize	0.016 (0.016)	-0.007 (0.015)	0.011 (0.015)	0.026 (0.016)
indb	-0.006** (0.003)	0.002 (0.002)	-0.005 (0.003)	-0.006* (0.003)
bst	0.223*** (0.061)	0.084 (0.060)	0.226*** (0.068)	0.174** (0.075)
csrc	-0.342*** (0.102)	-0.395*** (0.093)	-0.284*** (0.106)	-0.233** (0.093)
gcgc	-0.182 (0.148)	0.040 (0.120)	-0.095 (0.162)	-0.461*** (0.154)
roa	0.771 (6.684)	-4.839 (5.550)	5.284 (6.815)	0.211 (6.561)
lta	-0.475** (0.237)	-0.152 (0.100)	-0.593** (0.274)	0.017 (0.096)
dte	0.054 (0.040)	0.041 (0.036)	0.095** (0.043)	-0.045 (0.063)
regq	0.386 (0.287)	0.130 (0.246)	0.436 (0.291)	0.369 (0.248)
inf	-0.002 (0.005)	-0.001 (0.005)	0.002 (0.005)	-0.004 (0.004)
gdp	0.002 (0.009)	-0.005 (0.008)	0.008 (0.008)	-0.007 (0.008)
Constant	12.670** (5.934)	4.329* (2.520)	15.393** (6.850)	-0.176 (2.409)
Observations	1,672	1,710	1,710	1,710
R-squared	0.131	0.040	0.133	0.084
Number of banks	279	279	279	279
Bank FE	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes
Country FE	Yes	Yes	Yes	Yes

Note: Robust standard errors are in parentheses. *** denotes $p < 0.01$, ** $p < 0.05$, and * $p < 0.1$.

In addition, the endogeneity issue was addressed by analyzing the relationship between ESG controversies, women on boards, and ESG washing using instrumental variables, specifically board-specific skills and political empowerment (Avolio et al., 2022; Hillman et al., 2007; Kedia & Pareek, 2023; Lewellyn & Muller-Kahle, 2020; López-Cabarcos et al., 2023). The results presented in Table 4 confirm that the negative effects of ESG controversies and women on boards on ESG washing remain consistent, further validating the robustness of the findings.

Table 4. Robustness test using the instrumental variable (IV)

Variable	esgwash
esgcs	-0.003* (0.002)
wob	-0.040* (0.021)
ceod	0.336*** (0.116)
bsize	0.011 (0.014)
indb	-0.004 (0.004)
bst	0.143* (0.077)
csrc	-0.269*** (0.091)
gcgc	-0.177 (0.123)
roa	-1.591 (6.589)
lta	-0.347*** (0.117)
dte	0.051 (0.045)
regq	-0.030 (0.253)
inf	-0.002 (0.007)
gdp	0.004 (0.009)
Constant	9.937*** (2.781)
Observations	1,520
R-squared	0.086
Number of banks	259
Bank FE	Yes
Year FE	Yes
Country FE	Yes

Note: Standard errors are in parentheses. *** indicates $p < 0.01$, ** $p < 0.05$, and * $p < 0.1$.

Table 5. Robustness test using subsample analysis

Variables	Country development		Bank size		US banks	
	developed	developing	big	small	USA	non-USA
	esgwash	esgwash	esgwash	esgwash	esgwash	esgwash
esgcs	-0.003* (0.002)	-0.003 (0.003)	-0.003** (0.002)	0.001 (0.004)	-0.002 (0.002)	-0.004* (0.002)
wob	-0.015** (0.006)	-0.024*** (0.007)	-0.022*** (0.006)	-0.012 (0.008)	-0.020** (0.008)	-0.021*** (0.007)
ceod	0.057 (0.139)	0.403*** (0.144)	0.434*** (0.123)	-0.059 (0.384)	0.395* (0.214)	0.412*** (0.146)
bsize	-0.078*** (0.028)	0.057*** (0.017)	0.014 (0.016)	-0.033 (0.037)	0.043* (0.023)	-0.004 (0.021)
indb	-0.006 (0.005)	-0.003 (0.003)	-0.005 (0.003)	0.000 (0.007)	-0.006 (0.004)	-0.005 (0.004)
bst	0.247** (0.117)	0.203*** (0.070)	0.224*** (0.060)	0.296 (0.236)	0.197** (0.088)	0.202** (0.083)
csrc	0.006 (0.158)	-0.342*** (0.122)	-0.242** (0.111)	-0.375** (0.157)	-0.342** (0.135)	-0.309** (0.142)
gcgc	0.007 (0.258)	-0.297* (0.167)	-0.193 (0.148)	-0.480 (0.300)	-0.309 (0.215)	-0.016 (0.181)
roa	-17.486 (11.642)	7.304 (8.000)	-3.099 (7.404)	4.480 (14.467)	18.812* (10.720)	-14.209* (7.974)
lta	-1.155*** (0.250)	-0.369 (0.224)	-0.938*** (0.149)	-0.729 (0.458)	-0.292 (0.230)	-0.807*** (0.196)
dte	0.035 (0.049)	0.104* (0.056)	0.055 (0.039)	0.221 (0.141)	0.013 (0.084)	0.075 (0.045)
regq	-0.743* (0.443)	0.711** (0.346)	0.482 (0.311)	-0.485 (0.439)	0.504 (0.391)	0.308 (0.423)
inf	-0.005 (0.006)	-0.016 (0.012)	0.001 (0.006)	-0.000 (0.009)	-0.004 (0.007)	-0.000 (0.008)
gdp	-0.007 (0.014)	0.014 (0.011)	-0.004 (0.009)	0.039** (0.019)	-0.002 (0.012)	0.001 (0.013)
Constant	31.680*** (6.333)	9.358* (5.602)	24.571*** (3.783)	17.265 (10.852)	7.466 (5.803)	21.516*** (4.865)
Observations	609	1,063	1,437	235	776	896
R-squared	0.154	0.162	0.153	0.146	0.133	0.149
Number of banks	106	173	225	72	123	156
Bank FE	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Country FE	Yes	Yes	Yes	Yes	Yes	Yes

Note: Three subsample analyses were conducted based on country development, bank size, and US banks. Robust standard errors are in parentheses. *** denotes $p < 0.01$, ** $p < 0.05$, and * $p < 0.1$.

Several additional tests were conducted using subsample analyses to further examine the relationship between ESG controversies, women on boards, and ESG washing behavior. Table 5 presents the results. The findings reveal a negative and significant relationship between ESG controversies and ESG washing, particularly for banks in developed countries, large banks, and non-US banks. These results suggest that banks involved in scandals or controversies are more likely to engage in ESG washing, especially large banks operating in developed regions and outside the

United States. Additionally, the effect of women on boards remains consistently negative and significant across most subsamples, except for small banks. Overall, the results reinforce the consistent negative and significant association between ESG controversies, women on boards, and ESG washing practices across different subsample groups.

4. DISCUSSION

This study examines the impact of ESG controversies and the presence of women on boards (WOB)

on ESG-washing practices in the global banking sector. The primary objective is to address the research gap in understanding the relationship between ESG controversies and ESG washing and to clarify inconsistent findings in existing studies regarding the influence of women on boards on ESG washing.

The findings indicate that ESG controversy scores positively correlate with ESG-washing practices. In other words, the greater the number of controversies a bank faces, the higher the likelihood of engaging in ESG washing. This suggests that banks involved in controversies surrounding their sustainability practices often resort to unethical measures to obscure these issues. Simultaneously, banks recognize the reputational risks associated with unethical behavior in sustainability efforts and, as a result, strive to minimize such practices (Elamer & Boulhaga, 2024). Stakeholders are more likely to question the credibility of a bank's sustainability data if there are publicized scandals or violations tied to ESG performance. Thus, while banks with strong reputations are less likely to engage in ESG washing, those with higher ESG controversy scores may use ESG washing to conceal scandals and reduce reputational damage (Yu et al., 2020).

Additionally, the findings highlight that banks in developed countries generally demonstrate better sustainability practices, reflected in their lower ESG controversy scores. This is attributed to the heightened awareness of sustainability issues in mature markets, where stakeholders demand higher accountability (DasGupta, 2022; Jucá et al., 2024). This stakeholder vigilance

serves as a market mechanism to curb ESG violations. In terms of bank size, larger banks tend to have lower ESG controversy scores and are less likely to engage in ESG washing due to stricter regulatory scrutiny and oversight. Consequently, these banks adopt more cautious approaches to managing sustainability initiatives.

The study also reveals that the presence of women on boards has a negative impact on ESG-washing practices. Women's inclusion in corporate boards reduces unethical practices such as greenwashing, social washing, and governance washing. With a focus on pro-social and ethical considerations, women bring enriched perspectives to decision-making, particularly concerning sustainability projects. These results suggest that women's presence strengthens internal governance, enhancing their supervisory and advisory roles in mitigating deceptive practices.

Women are also more likely to uphold stringent ethical standards and view questionable business practices as unethical (Post & Byron, 2014). Consistent with the findings of Liu (2018) and Issa and Hanaysha (2023), firms with higher gender diversity on boards are less likely to face lawsuits over environmental violations and ESG controversies. This study further corroborates the findings of Zahid et al. (2023) and Zhang (2023), which demonstrate that women on corporate boards enhance environmental performance, improve disclosure practices, and reduce greenwashing. Moreover, companies led by women are significantly less likely to engage in greenwashing compared to those led by men.

CONCLUSION

This study finds that ESG controversies contribute to ESG-washing practices in the global banking sector, while the presence of women on boards serves to mitigate such practices. These findings provide empirical evidence on the relationship between ESG controversies and the moderating role of women on boards in addressing ESG washing. Banks often resort to ESG washing as a damage-control strategy when media scrutiny exposes unethical practices, but such behavior can have long-term reputational and trust-related consequences. To safeguard their future performance, banks must avoid ESG-related scandals and prioritize ethical sustainability practices.

Moreover, the findings highlight the critical role of women on boards in reducing unethical practices associated with ESG reporting. An optimal representation of women on boards fosters transparency and

ethical behavior, offering a practical solution to combating ESG washing. Enhancing gender diversity, combined with the adoption of sustainability assurance standards, emerges as a dual approach to addressing ESG-related misinformation.

This study offers key implications for policymakers, banking institutions, and stakeholders aiming to promote sustainable practices. Firstly, the positive association between ESG controversies and ESG washing underscores the critical need for robust reputation management in the banking sector. Banks entangled in ESG-related scandals risk losing stakeholder trust, resulting in significant reputational damage. Policymakers should consider developing stricter regulatory frameworks to penalize unethical practices and encourage transparency in ESG reporting. Furthermore, the study's findings on the negative relationship between women on boards and ESG washing highlight the importance of gender diversity in corporate governance. Diverse boards are more inclined to adopt genuine sustainability initiatives and reduce unethical practices. Regulators and industry leaders should promote policies that encourage female participation in leadership roles to enhance the credibility of ESG disclosures and corporate ethics. Finally, banks in developed countries and larger institutions exhibit fewer ESG controversies and are less prone to ESG washing, reflecting the influence of regional factors such as regulatory environments and stakeholder awareness. This highlights the importance of tailoring ESG standards to regional contexts while fostering the universal adoption of best practices. A global approach to ESG governance, accounting for regional nuances, can support more consistent and authentic sustainability efforts worldwide.

Despite its contributions, this study has certain limitations. The analysis is confined to the global banking sector, and future research could benefit from exploring ESG washing practices across non-financial industries. Incorporating sustainability assurance variables and investigating their moderating effects could further elucidate the role of external oversight in preventing unethical ESG practices. Additionally, examining the effectiveness of policies aimed at strengthening corporate governance in reducing ESG washing represents a promising direction for future research. Expanding the scope of analysis to include diverse regulatory and institutional environments could provide valuable insights into the interplay between governance mechanisms and ESG outcomes.

AUTHOR CONTRIBUTIONS

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APPENDIX A

Table A1. Variables and definitions

Variables	Abbr.	Definition	Source
Dependent variable			
ESG washing	esgwash	A firm's peer-relative ESG-washing score = (a normalized measure representing a firm's relative position to its peers in the distribution of the Bloomberg ESG disclosure score) - (a normalized measure representing a firm's relative position to its peers in the distribution of the Refinitiv ESG performance score)	Refinitiv Eikon & Bloomberg
Independent variables			
Women on board	wob	Percentage of women on the corporate board of banks	Refinitiv Eikon
ESG controversy	esgcs	The score measures a company's exposure to ESG controversies and negative events reported in global media. A score of 100 means the company has not been linked to any controversies, while a score below 100 indicates the presence of controversies.	Refinitiv Eikon
Control variable			
Bank level			
CEO duality	ceod	Dummy variable coded 1 if CEO is also the chair of board of directors, 0 others	Refinitiv Eikon
Board size	bsize	Total number of directors on the board	Refinitiv Eikon
Board structure type	bst	1 for one-tier, 2 for two-tier, and 3 for others	Refinitiv Eikon
Independent director	indb	Percentage of independent directors on board	Refinitiv Eikon
CSR committee	crsc	Dummy variable coded 1 if the bank has CSR or sustainability committee, 0 otherwise	Refinitiv Eikon
GCG committee	gcgc	Dummy variable coded 1 if the bank has GCG or governance committee, 0 otherwise	Refinitiv Eikon
Return on asset	roa	Ratio of net income to total value of assets	Refinitiv Eikon
Total asset	lta	Natural logarithm of total assets	Refinitiv Eikon
Debt ratio	dte	Total debt to total equity	Refinitiv Eikon
Country level			
Regulation quality	regq	Capturing perceptions of the ability of the government to formulate and implement sound policies and regulations that permit and promote private sector development. Percentile rank indicates the country's rank among all countries covered by the aggregate indicator, with -2,5 corresponding to lowest rank, and 2,5 to highest rank.	World Governance Indicators
Inflation	inf	Measured by the consumer price index (annual %)	World Bank
Gross domestic product	gdp	Percentage growth rate of GDP (annual %)	World Bank

APPENDIX B

Table B1. Descriptive statistics

Variables	Obs	Mean	Std. Dev.	Min	Max
esgwash	4065	.335	.954	-2.388	2.898
esgcs	5775	92.017	21.483	6.081	100
wob	5760	17.606	12.988	0	50
ceod	5783	.293	.455	0	1
bsize	5780	11.809	3.513	5	22
indb	5772	59.244	27.327	0	100
bst	5747	1.37	.705	1	3
crsc	5778	.452	.498	0	1
gcgc	5783	.562	.496	0	1
roa	6905	.011	.008	-.008	.049

Table B1 (cont.). Descriptive statistics

Variables	Obs	Mean	Std. Dev.	Min	Max
lta	6680	23.966	1.875	20.58	28.565
dte	9391	1.191	1.615	0	9.249
regq	8797	-0.655	1.275	-2.39	1.84
inf	6680	25.928	56.294	-877	254.949
gdp	6433	3.072	3.746	-10.36	11.016

APPENDIX C

Table C1. Pairwise correlations

Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
(1) esgwash	1.000	-	-	-	-	-	-	-	-	-	-	-	-	-	-
(2) esgcs	-0.004	1.000	-	-	-	-	-	-	-	-	-	-	-	-	-
(3) wob	-0.139*	-0.208*	1.000	-	-	-	-	-	-	-	-	-	-	-	-
(4) ceod	0.090*	0.038*	-0.032	1.000	-	-	-	-	-	-	-	-	-	-	-
(5) bsize	0.147*	-0.158*	0.068*	0.029	1.000	-	-	-	-	-	-	-	-	-	-
(6) indb	-0.052*	-0.070*	0.313*	0.213*	-0.108*	1.000	-	-	-	-	-	-	-	-	-
(7) bst	0.084*	0.051*	-0.147*	-0.198*	0.052*	-0.408*	1.000	-	-	-	-	-	-	-	-
(8) csrc	-0.142*	-0.257*	0.174*	-0.148*	0.168*	-0.136*	0.075*	1.000	-	-	-	-	-	-	-
(9) gcgc	-0.057*	-0.082*	0.104*	0.229*	-0.004	0.435*	-0.385*	-0.088*	1.000	-	-	-	-	-	-
(10) roa	-0.101*	0.149*	-0.089*	0.079*	-0.129*	-0.036	-0.106*	-0.075*	0.059*	1.000	-	-	-	-	-
(11) lta	-0.027	-0.446*	0.140*	-0.159*	0.341*	-0.264*	0.323*	0.507*	-0.199*	-0.216*	1.000	-	-	-	-
(12) dte	0.000	-0.187*	0.133*	-0.139*	0.026	-0.137*	0.260*	0.261*	-0.189*	-0.174*	0.398*	1.000	-	-	-
(13) regq	-0.052*	-0.239*	0.078*	-0.353*	0.095*	-0.438*	0.254*	0.452*	-0.320*	-0.027	0.490*	0.373*	1.000	-	-
(14) inf	0.047	-0.005	0.009	0.295*	0.029	0.270*	-0.156*	-0.176*	0.195*	-0.050*	-0.352*	-0.201*	-0.578*	1.000	-
(15) gdp	0.080*	0.048*	-0.078*	-0.012	0.062*	-0.134*	0.035	-0.040	-0.032	0.074*	0.109*	0.006	0.010	-0.367*	1.000

Note: * denotes $p < 0.01$.