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# Board Gender Diversity and Environmental, Social & Governance Performance of US Banks: Moderating role of Environmental Social and Corporate Controversies

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**Board Gender Diversity and Environmental, Social & Governance Performance of US Banks: Moderating role of ESG Controversies**

**Abstract**

**Purpose**: Gender diversity in corporate boards is broadly studied in existing corporate governance literature. However, the role of board gender diversity on environmental, social, and governance (ESG) performance of the banks is still unaccounted for. Drawing on resource dependence and legitimacy theory, this study addresses this pressing research issue. Moreover, investigation of ESG controversies as moderator paves the existing corporate governance research to the new avenues.

**Design/methodology/approach:** Data sourced from Refinitiv database on 37 US banks from the period of 2013 to 2017. This study employs static and dynamic panel regression models that include random effects, fixed effects and dynamic generalised method of moments (GMM) to test the hypotheses. Furthermore, system GMM is used to reduce the issue of endogeneity, measurement error, omitted variables bias and bank-specific heterogeneity.

**Findings:** We identify a significant positive relationship between board gender diversity and the ESG performance of US banks. However, the result propounds non-significant moderating effect of ESG controversies on the board gender diversity – ESG performance nexus.

**Originality/value:** Literature on board gender diversity and ESG separately and predominantly explains firm/bank's financial performance. This study is one of the pioneering attempts to explain the role of board gender diversity on ESG performance. Although incremental, however, this study also contributes to the literature on ESG in the US context.

*Keywords: ESG performance, board gender diversity, ESG controversies, banks, developed market, system GMM.*

**Paper type** Research paper

## 1. Introduction

Gender diversity in corporate boards is a pressing issue in corporate governance (Ahmed *et al.*, 2017). In recent years, women are redefining the workplace by relocating themselves in the board-room of giant corporate firms such as General Motors, Best Buy and Anthem (Banahan and Hasson, 2018; Catalyst, 2020a). Regulators and standard-setting bodies are emphasising on the gender diversity of the board. Gender equality is one of the major agendas of United Nations Development Programme (UNDP) "2030 Agenda for Sustainable Development Goals" to promote women empowerment (United Nations Development Programme, 2015). Several countries are urging firms to increase female participation on the corporate boards, which include both emerging and developed countries, for instance, Brazil, Malaysia, Norway, UK, Spain, Sweden, and others (The Economist, 2014). Norway is the pioneer among countries to mandate gender quota in 2008 (Mateos de Cabo *et al.*, 2019; The Economist, 2018). The country enforces a quota of 40 per cent for female members on corporate boards in the listed firms (The Economist, 2018). Later, France, Italy and Belgium comply with the sanction (The Economist, 2018). However, the case of North America is divergent than the developed economies in Europe. The percentage of women participation on the corporate board in the US is only 20 per cent in 2019 in the listed firms by the Russell 3000 index. Its exhibits a surge of 2 per cent compared to the year 2018 (2020 Women on Boards, 2020). It takes effect after the enforcement of the law in California to include at least one female member on the firm's board in 2019 (Gupta, 2019). The weak representation of women participation in the US firms' board and imposing new legislation to include at least one female member on corporate board raise the question of the legitimacy of the women executive's role in firm's board. Whether women participation in the bank's board create any significant influence on the bank's future strategy? Hence, an investigation of ESG performance in the context of US banks can merit profound insights into the above-asked question.

To overcome the caveats pertaining to the female participation to complement corporate boards, developed countries embrace favourable regulations to appoint a certain percentage of female members on firms' board. However, Owen and Temesvary (2018) proffer that the presence of women participation in the leadership roles in a financial service organisation is comparatively low. The presence of women on the board-room of large US banks are only 12.55 per cent (Owen and Temesvary, 2018). One of the reasons for such less participation of female on a corporate board is the pay-gap and the job role (Owen and Temesvary, 2018). Reports show that 44.7 per cent of the workforce of S&P 500 companies are women and among those, 36.9 per cent are first or mid-level managers and 5.8 per cent women play the role of the CEO in the firms (Catalyst (2020b). Moreover, research also shows that female CEOs have less propensity to take the risk (Faccio *et al.*, 2016), which in turn adversely affect the financial performance of the firm (Adams and Ferreira, 2009). Recently, research highlights the negative effects of having a female member on the corporate board to the performance in the US firms (Adams and Ferreira, 2009). In contrary, the positive impact of having a female member on the corporate board to complement bank performance have been reported too (García-Meca *et al.*, 2015; Pathan and Faff, 2013), as well as the positive response is perceived in better capitalised US banks (Owen and Temesvary, 2018). Board gender diversity is essential for a bank to have clarity and innovativeness in decision making (García-Meca *et al.*, 2015). A diversified and balanced board consists of members with diversified experience, knowledge and expertise to complement the overall performance of the firm. However, despite of the holistic performance, can we claim that the board gender diversity positively influences the ESG performance of the Bank? Previous researches replete with the relationship between board gender diversity and bank performance (García-Meca *et al.*, 2015; Owen and Temesvary, 2018; Pathan and Faff, 2013), and lack to justify the relationship

between the board gender diversity and ESG performance. This research addresses this pressing research issue especially from banking institution context in a developed economy.

ESG is a set of codes for a firm's operations that socially and environmentally sensible investors use to screen future investments (Chen, 2020). ESG is defined as "the consideration of environmental, social and governance factors alongside financial factors in the investment decision-making process" (MSCI, 2019). It is the mix of environmental and social activities of CSR along with the corporate governance indicators (Gerard, 2019). ESG is also regarded as the fundamental strategy of corporate sustainability, and generally popular in banking institutions (McDonald and Rundle-Thiele, 2008). Effective strategic decisions to inject resources and capital to improve and achieve the commitments pertaining to ESG help banks to achieve a sound financial position, and upsurge customer loyalty (Arli and Lasmono, 2010; Buallay, 2019; Buallay *et al.*, 2020; Shakil *et al.*, 2019). Any negligence on ESG may harm the goodwill of the bank and question long-term sustainability. Undoubtedly, banks must be careful in investing in projects that are environmentally harmful and socially contradicting. Given that, sometimes banks negate prioritising ESG obligations and engage themselves in ESG controversies. It might contradict with the commitments to achieve collective environmental and social goals. ESG controversies include negative news about a firm's social and environmental scandals, lawsuits and failure of corporate governance (Aouadi and Marsat, 2018; Refinitiv, 2020). ESG controversies may affect banks financial performance, adversely impact the market reputation and may last longer (Flood, 2019). It may take more than one year for a firm to surpass a trench afterwards an ESG controversy (Flood, 2019). Due to ESG controversies in the large US banks, for instance, Wells Fargo, Citigroup and Goldman Sachs paid USD 243 billion penalties after the financial distress (Flood, 2019). For example, the controversy of Wells Fargo bank by creating fake accounts cost the bank to pay USD 575 thousand fines for breaching the customers' trust (CNBC, 2018). Such an act affects the bank's

reputation in the market, and the stock price of the bank experienced a sharp decline after the scandal. Goldman Sachs has been imposed a charge of USD 45 million by the UK financial watchdog for misreporting 220 million transactions (Wild, 2019). Besides, USD 57 million has been paid by the Citigroup for false reporting to regulatory authorities regarding money-lender's deposit and liquidity (Brush *et al.*, 2019).

Banks involvement in the controversies destroys the goodwill of banks (Li *et al.*, 2019). However, banks are opportunistic and have the norm to invest aggressively in ESG related activities to regain the lost reputation in the market. ESG controversies play the role of a stimulator for firms/banks to boost up the ESG performance (Li *et al.*, 2019). The banks with low ESG controversies and high ESG performance enjoys better financial performance compared to the banks with high ESG controversies (Buallay, 2019; Buallay *et al.*, 2020; Shakil *et al.*, 2019). Prior studies show inverse effects of ESG controversies on firm value (Johnson, 2003; Orlitzky, 2013). Klassen and McLaughlin (1996) study the effect of controversial ESG news on stock performance and find a significant adverse impact on stock returns. However, Krüger (2015) finds that investors react weakly and negatively to positive ESG news. Thus, ESG controversies of banks may leverage the ESG performance to regain the investors' and shareholders' trust.

The moderating role of ESG controversies between gender diversity and ESG performance is limited in the literature. Previous studies mainly focus on the impact of board gender diversity on financial performance and risk of firms or banks (Dwyer *et al.*, 2003; García-Meca *et al.*, 2015; Sila *et al.*, 2016). Moreover, some studies investigate the effect of board gender diversity on CSR or ESG performance of firms and find significant '*positive*' (Arayssi *et al.*, 2020; Boulouta, 2013; Kyaw *et al.*, 2017; Velte, 2016); '*negative'* (Harjoto *et al.*, 2015; Husted and Sousa-Filho, 2019), '*inconclusive* and *non-significant*' results (Manita *et*

*al.*, 2018). Is there a need for interactions between the relationship of board diversity and ESG performance to contribute to this regime? Do ESG controversies as a moderator fulfil this research gap? Prior research scants to acknowledge this conjunction. Hence, this study addresses *whether ESG controversies of the US banks moderate the board gender diversity-ESG performance nexus?*

Thus, this study contributes to the literature of corporate governance and corporate sustainability, more precisely gender diversity and ESG by investigating the effects of board gender diversity on ESG performance of 37 US banks from 2013 to 2017. In addition, this study examines the moderating effects of ESG controversies on the relationship between board gender diversity and ESG performance. This study finds a significant and positive association between board gender diversity and the ESG performance of US banks. However, the moderating role of ESG controversies on the relationship between board gender diversity and ESG performance is not evident. This study contributes to the literature of gender diversity (Birindelli *et al.*, 2019; Manita *et al.*, 2018) and ESG by postulating empirical evidence (Arayssi *et al.*, 2020; Cucari *et al.*, 2018) that the participation of female members on the board considerably affects the ESG performance of banks. The positive association between gender diversity and ESG performance support the resource dependence theory by exhibiting women's background, psychological characteristics and experience as critical resources for banks (Kyaw *et al.*, 2017); and these intellectual and interpersonal attributes of women directors assist them to achieve the legitimate performance in ESG (Jizi, 2017). It conveys the legitimate actions of women on board, and support the legitimacy theory due to women directors' sensitivity to environmental and social activities of banks (Aouadi and Marsat, 2018).

## 2. Literature review and hypothesis development

### *2.1 The effects of board gender diversity on ESG performance*

The composition of the management board is an essential factor of corporate governance in influencing the ESG performance (Velte, 2016). Female board members' background, psychological characteristics and experience influence them to involve in the strategic decision that affects banks ESG and their stakeholders (Manita *et al.*, 2018). Board gender diversity and ESG performance can explain by the resource dependence theory. *Resource dependence theory* explains that firm performance depends on the critical resources that board members hold such as background, psychological characteristics and experience (Kyaw *et al.*, 2017; Manita *et al.*, 2018). Corporate board is a significant source of critical resources of the firm (Hillman and Dalziel, 2003). It helps a firm to take strategic decision and navigate pressures from stakeholders with the help of collective expertise and experience of the board members (Hillman and Dalziel, 2003; Post *et al.*, 2015). Female board members have different perspective and opinions compare to male board members (Burgess and Tharenou, 2002). The perspective and opinions of female board members facilitate firms or banks to make a compassion driven strategic decision like ESG, which increases the ESG performance (Kyaw *et al.*, 2017). Moreover, better ESG decision helps firms or banks to increase financial performance (Adams and Ferreira, 2009; Husted and Sousa-Filho, 2019). Previous studies on board gender diversity and bank performance support the notion that female participation in board-room positively affects the firm financial performance (García-Meca *et al.*, 2015; Owen and Temesvary, 2018). However, Pathan and Faff (2013) identify inverse relationship between board gender diversity and bank performance in the post-Sarbanes-Oxley Act and the crisis period. Besides, some researchers examine the effects of board gender diversity on ESG performance of firms and find a positive and negative impact of board gender diversity on ESG

performance (Arayssi *et al.*, 2020; Cucari *et al.*, 2018; Husted and Sousa-Filho, 2019). The literature on board gender diversity and ESG performance in the context of banks is limited. The effect of board gender diversity may have a positive (negative) influence on ESG performance due to banks gender-mix on the board-room. This study, therefore hypothesises in a non-directional prediction that board gender diversity significantly affects the ESG performance of banks.

*H1: Board gender diversity has a significant effect on environmental social and governance performance of banks.*

### *2.2 Moderating effects of ESG controversies on the relationship between board gender diversity and ESG performance*

ESG controversies derive from the negative news by ESG activities of the banks that destroy the overall reputation (Aouadi and Marsat, 2018). ESG controversies question the legitimacy of the actions by the banks and its board members. Legitimacy theory explains the effects of ESG controversies on banks ESG performance, and how gender-diversified board reacts to ESG controversies. Suchman (1995) describes "legitimacy as a generalised perception or assumption that the actions of an entity are desirable, proper, or appropriate within some socially constructed system of norms, values, beliefs, and definitions'' (p. 574). ESG controversies of a bank are not desirable, as it costs the good will and harms profitability. Banks with more controversies try to legitimate their actions by disclosing more information in ESG activities and invest in ESG related projects aggressively to attain stakeholders trust. However, ESG controversies cause significant harm to banks profitability, and due to weak financial position, banks are unable to invest in ESG activities. ESG performance of banks may significantly reduce due to ESG controversies. In general, board members take the strategic decision like ESG. Female board members are concerned than their male counterparts

regarding ESG welfare (Arayssi *et al.*, 2020), and they consider ESG controversies seriously. Board gender diversity helps banks to act on ESG and monitor the ESG controversies closely to improve the reputational damage. This study, therefore, hypothesises in a non-directional prediction that ESG controversy of banks may significantly moderate the relationship between board gender diversity and ESG performance.

*H2: ESG controversies significantly moderate the relationship between board gender diversity and the ESG performance of banks.*

## 3. Sample, data and methodology

The sample includes 37 US banks between 2013 and 2017. Board gender diversity, the ESG and ESG controversies data are gathered from Refinitiv. Refinitiv is the reliable source of board gender diversity, ESG performance, ESG controversies and financial data. Many notable studies use the Refinitiv for ESG and ESG controversies data, based on previous literature this study also uses ESG and ESG controversies score by Refinitiv (Aouadi and Marsat, 2018; Arayssi *et al.*, 2020; Ioannou and Serafeim, 2012). The financial data is also gathered from Refinitiv. Other bank-specific control variables are also included in this study due to their significant influence on ESG performance of banks based on previous studies (Albitar *et al.*, 2020; Arayssi *et al.*, 2016; Arayssi *et al.*, 2020; Husted and Sousa-Filho, 2019; Shakil *et al.*, 2019; Velte, 2016).

### 3.1 Measurement

*Dependent variable*

We use ESG score by Refinitiv as a proxy for the ESG performance of banks. Refinitiv uses 68 environmental, 62 social and 56 corporate governance key performance indicators to

measure the ESG score of firms/banks and provides a score in percentage between 0 and 100 (Refinitiv, 2020).

*Independent variable*

Percentage of women on the corporate board of banks is used as a proxy for board gender diversity. The proxy is used based on studies by Cordeiro *et al.* (2020), Husted and Sousa-Filho (2019), Cucari *et al.* (2018) and Galbreath (2018).

*Moderating variable*

Refinitiv measures ESG controversy score based on 23 controversy topics[1]. By following the study of Aouadi and Marsat (2018) and Arribas *et al.* (2019), this study has taken ESG controversy score by Refinitiv as a measure of ESG controversy of the banks.

*Control variables*

We capture the effect of bank-specific variables on the ESG performance of banks. We include bank leverage (Brammer and Millington, 2008; Harjoto *et al.*, 2015; Velte, 2016), bank market to book value (Chollet and Sandwidi, 2018; Sila *et al.*, 2016), bank size (Arayssi *et al.*, 2020; Boulouta, 2013), dividend yield (Chollet and Sandwidi, 2018; Oikonomou *et al.*, 2012) and bank profitability (Cordeiro *et al.*, 2020; Harjoto *et al.*, 2015) as control variables based on the literature of ESG. The description of the control variables is presented in Table A1.

3.2 Model specifications

This study uses both static and dynamic panel regression models such as random effects, fixed effects and system generalised method of moments (GMM) to test the hypotheses based on

[1] https://www.refinitiv.com/content/dam/marketing/en_us/documents/methodology/esg-scores-methodology.pdf

previous literature (Ahmed *et al.*, 2017; Arayssi *et al.*, 2020; Manita *et al.*, 2018). Mainly, system GMM model is applied in this study to reduce the issue of endogeneity, measurement error, omitted variables bias and bank-specific heterogeneity (Wintoki *et al.*, 2012). Wintoki *et al.* (2012) further reason that current year corporate governance is affected by last year performance. This conjecture of Wintoki *et al.* (2012) establishes the superiority of GMM over random effects and fixed effects models (Ahmed *et al.*, 2017).

Model 1 tests the direct relationship between gender diversity of the board and ESG performance of US banks. Model 1 is shown as follows:

$$\mathrm{ESG_{it}} = \alpha_0 + \alpha_1 \mathrm{GED_{it}} + \alpha_2 \mathrm{LEVE_{it}} + \alpha_3 \mathrm{MVB_{it}} + \alpha_4 \mathrm{SIZE_{it}} + \alpha_5 \mathrm{DIY_{it}} + \alpha_6 \mathrm{ROA_{it}} + \mu_{it} + e_{it} \qquad \text{(Model 1)}$$

Note: legends: ESG = environment, social and governance performance; GED = board gender diversity; LEVE = leverage ratio; MVB = market to book value; SIZE = log of total asset; DIY = dividend yield; ROA = return on assets; $\mu_{it}$ = unobserved effects of bank i in year t; $e_{it}$= the error term

Model 2 tests the moderating role of ESG controversies on the relationship between board gender diversity and the ESG performance of US banks. Model 2 is presented as follows:

$$\mathrm{ESG_{it}} = \alpha_0 + \alpha_1 \mathrm{GED_{it}} + \alpha_2 \mathrm{LEVE_{it}} + \alpha_3 \mathrm{MVB_{it}} + \alpha_4 \mathrm{SIZE_{it}} + \alpha_5 \mathrm{DIY_{it}} + \alpha_6 \mathrm{ROA_{it}} + \alpha_7 \mathrm{ESGCON_{it}} + \alpha_8 \mathrm{ESGCON} * \mathrm{GED_{it}} + \mu_{it} + e_{it} \qquad \text{(Model 2)}$$

Note: legends: ESG = environment, social and governance performance; GED = board gender diversity; LEVE = leverage ratio; MVB = market to book value; SIZE = log of total asset; DIY = dividend yield; ROA = return on assets; ESGCON = ESG controversies score; $\mathrm{ESGCON} * \mathrm{GED}$ = the interaction variable; $\mu_{it}$ = unobserved effects of bank i in year t; $e_{it}$= the error term

3.2 Descriptive statistics

Descriptive statistics and variance inflation factor (VIF) of variables are presented in Table 1. Mean ESG score is 52.13 per cent, which shows an above-average ESG performance of US banks. Although the US banks maintain a better environmental, social and governance performance, banks also have a high level of ESG controversies as the average ESG controversy score is 41.74 per cent. In addition, the average percentage of female members on

the bank's board is 20.28 per cent, which shows a low representation of female members on the bank's board. However, ESG controversies, ESG performance and board gender diversity show relatively high standard deviation due to substantial variation of ESG controversies, ESG performance and board gender diversity among the US banks. Other bank-specific control variables are also presented in Table 1 that includes bank leverage, market to book value, size, dividend yield, and return on assets. Mean leverage of bank is 7.94 per cent, which shows US banks tend to use less long-term debt. Market to book value is 1.25, that shows banks are overvalued in the market. Bank size, dividend yield and return on assets are 7.86, 2.19 and 1.11, respectively. This study also tested for multicollinearity among continuous variables. It carried out the Pearson correlation coefficients and VIF tests to check for multicollinearity (Hair *et al.*, 2006). Correlation among variables is presented in Table 2. The results show the highest correlation between ESG performance and bank size, while the lowest correlation is between ESG performance and dividend yield. Besides, board gender diversity shows a positive correlation with ESG performance ($p < 0.05$); however, ESG controversy shows negative correlational with ESG performance ($p < 0.05$). Market to book value shows a negative correlation with ESG performance. The correlation coefficients of variables are lower than the threshold level 0.90 and VIF values of explanatory variables are less than the threshold value 10, which shows insignificant multicollinearity among variables (Hair *et al.*, 2006).

**[Insert Table 1 about here]**

**[Insert Table 2 about here]**

## 4. Discussion, contribution and implication

### *4.1 Observed relationships*

Table 3 shows the estimation results of random effects, fixed effects and system GMM models of *h1* and *h2*. *H1* investigates whether board gender diversity significantly influences the ESG

performance of banks and finds significant and positive effects of board gender diversity on ESG performance of US banks in random effects, fixed effects and system GMM models. The findings of this study support the resource dependence theory (Kyaw *et al.*, 2017; Manita *et al.*, 2018) by signifying women director's intellectual and interpersonal traits as a critical resource for banks to attain the legitimate performance in ESG. Our findings also support the legitimacy theory (Arayssi *et al.*, 2020) due to women director's compassion for environmental and social activities. The findings imply that despite the limited participation of female members on the board-room of US banks, their presence positively influences the ESG performance of the banks. Female board members' unconditional commitment to an ethical standard and climate change helps them to address the environmental and social issues more sensibly (Ben-Amar and McIlkenny, 2015; Ciocirlan and Pettersson, 2012). Consequently, the participation of women directors of banks board-room is growing for US banks, although the percentage of women on banks board is relatively low for the US banks (Owen and Temesvary, 2018). Engaging more women in banks board is not merely to tick the box of gender requirements but also benefits banks to improve the board functions (Arayssi *et al.*, 2016). Previous studies also find significant positive effects of board gender diversity on ESG performance of firms in the context of Gulf Cooperation Council (GCC) countries (Arayssi *et al.*, 2020), German-Austrian settings (Velte, 2016), Europe (Kyaw *et al.*, 2017) and in an international context (Boulouta, 2013). In the context of emerging economy countries, the effect of board gender diversity on the ESG performance shows significant positive impact (Khan *et al.*, 2019; Wasiuzzaman and Wan Mohammad, 2020). Wasiuzzaman and Wan Mohammad (2020) studies the impact of board gender diversity and ESG performance of Malaysian firms and reports a positive association. Khan *et al.* (2019) also find similar results while studying the effect of gender on CSR practices of Pakistani firms. The literature on board gender diversity and ESG performance is limited. To the best of our knowledge, one study

analyses the effect of women leaders on the environmental performance of European, Middle Eastern and African (EMEA) banks and finds the significant non-linear association of women leaders on the environmental performance of EMEA banks, more importantly, female chief executive officers, play a crucial role to foster the relationship (Birindelli *et al.*, 2019). However, Husted and Sousa-Filho (2019) find adverse effects of board gender diversity on ESG disclosure in the context of Latin American firms. Manita *et al.* (2018) find non-significant impacts of board gender diversity on ESG disclosure of US firms. Our study contributes to the gender diversity and ESG literature of financial institutions by showing a significant positive effect of board gender diversity on ESG performance of US banks. The findings of the study imply that a balanced gender diversified board increases the ESG performance of banks. The findings will motive banks to embark on board gender diversity as by encouraging more female participation on the banks' board.

In addition, this study tests hypothesis 2 by investigating the moderating role of ESG controversies on the association between board gender diversity and ESG performance. Our results show non-significant moderating effects of ESG controversies on the association between board gender diversity and ESG performance of US banks. The findings of this study do not support hypothesis 2. Thereby, ESG controversies do not influence the relationship between board gender diversity and ESG performance. It may happen due to women director's legitimate actions to improve the ESG performance, which may result in the subsequent reduction of ESG controversies of banks (Arayssi *et al.*, 2020; Kyaw *et al.*, 2017). Moreover, women directors concern towards environmental and social issues enhance banks/firms ESG performance radically (Kyaw *et al.*, 2017). Hence, the ESG controversies can generate a trivial effect on gender diversity-ESG link due to women directors' concern toward ESG.

Finally, Table 3 illustrates the results of the control variables. Banks leverage shows a significant negative effect on ESG performance, while bank size shows significant positive effects on ESG performance in random effects and fixed effects regression models, respectively. The results are consistent with previous literature (Arayssi *et al.*, 2020; Manita *et al.*, 2018; Velte, 2016). The bank with high leverage has fewer resources to invest in environmental and social activities. Thus, banks having high leverage have low ESG performance compared with the bank with a low leverage ratio. However, large banks have affluent resources and workforce. By using resources and workforce, large banks can generate more profit and profitability to assist banks to invest in ESG activities that result in better ESG performance. Other bank-specific control variables such as market to book value, dividend yield and return on assets show a non-significant effect on ESG performance.

**[Insert Table 3 about here]**

**[Insert Table 4 about here]**

*4. 2 Research contribution*

The fundamental objective of this study is to investigate the role of board gender diversity in complementing ESG performance along with the contingency effects of ESG controversies between the relationship as mentioned above in the US bank context. To answer, we bring together the *resource dependency theory* (Kyaw *et al.*, 2017; Manita *et al.*, 2018), and the *legitimacy theory* (Arayssi *et al.*, 2020). We argue that the relationship between board gender diversity and ESG performance is resource-dependent and gender-specific. It implies that the relationship between board gender diversity and ESG performance is pertinent to how well women director's intellectual and interpersonal traits are aligned with – and encompasses with compassions to undertake ESG activities in the US banks. Our study sheds light into corporate governance and corporate sustainability literature by postulating that an effort to take on

responsibilities to increase bank's propensity to embrace more ESG activities largely hinge upon critical intangible resources such as director's background, psychological characteristics and prior experiences (Kyaw *et al.*, 2017; Manita *et al.*, 2018). Moreover, we advance CSR literature by probing that intellectual capital, and interpersonal attributes of the directors play a pivotal role in shaping bank's ESG performance (Arayssi *et al.*, 2020; Husted and Sousa-Filho, 2019). Besides, women directors are more prone to initiate legitimate actions, which in turn increase environmental and social activities of the banks. Banks with gender diversified board are more cautious when dealing with ESG activities and make sure of that the banks perform legitimate ESG activities. This is in line with the bank's corporate sustainability goal. The moderating role of ESG controversies in the case of US banks shows inconclusive evidence on board gender diversity-ESG performance nexus due to US banks' aggressive strategy to attain ESG goals, better market reputation and female board members active involvement in corporate strategy to ensure legitimate ESG performance (Aouadi and Marsat, 2018; Kyaw *et al.*, 2017). In addition, due to better monitoring of ESG actions by gender diversified board members, firms engage in fewer controversies and avoid greenwashing in ESG reporting.

*4.3 Research implications*

This study contributes to the existing ESG literature by providing empirical evidence that the presence of female members on board significantly affects the ESG performance of banks. The findings of this study are significant for regulators, users of the banks' annual reports and international researchers. The result provides valuable insight to stakeholders, particularly to the shareholders regarding the bank's ESG performance, and to understand *how board diversity impact on ESG performance*. The findings benefit regulators to tighten the policy on corporate governance, which improves the accountability of banks to increase the participation of female members on banks board. Also, it enforces banks to follow good governance practices. For the

securities commission, the findings will assist them to set an appropriate regulation for ESG. The regulation will be the reference point for the listed banks; and breach the constitution of the regulation will lead to specific penalty for banks.

## 5. Additional analysis

This study also uses further tests to check whether the results are consistent with other tests. This study further tests the hypotheses by using pooled ordinary least squares (OLS) regression and finds significant positive effects of board gender diversity on ESG performance of US banks at 1 per cent significance level. However, this study finds the non-significant moderating effect of ESG controversy on the relationship between board gender diversity and ESG performance. The findings of pooled OLS are consistent with the findings of the main tests. Besides, the findings show a significant negative effect of the market to book value on ESG performance and significant positive effect of bank size on ESG performance.

## 6. Conclusion, limitation and future research avenues

This study examines the influences of board gender diversity on ESG performance in the context of US banks between 2013 and 2017. This study finds significant positive impacts of board gender diversity on ESG performance. However, this study reports non-significant moderating effects of ESG controversies on the relationship between board gender diversity and ESG performance of the US banks. Hence, this study is not free from limitations.

This study mainly focuses only single attribute of board characteristics that is gender diversity and considers the case of banks in a developed economy. Future study may consider the impact of other board characteristics such as board size, board independence, chief executive officer's duality and gender on ESG performance in the context of an emerging country. Moreover, future studies may explore the effect of a threshold level of board gender

diversity on the ESG performance of banks. As this study is based on a single country and the sample size is relatively small due to the lack of ESG data for other banks. Thus, future studies can investigate the effect of board attributes on the ESG performance by extending the sample in the context of emerging and developed countries' banks. In addition, this study investigates the moderating effect of ESG controversies on board gender diversity-ESG performance nexus. Future studies may explore whether board gender diversity has any effect on ESG controversies of banks by considering an international sample.

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Table 1: Descriptive Statistics

| Variable | Observation | Mean | Standard deviation | Minimum | Maximum | VIF |
|---|---|---|---|---|---|---|
| ESG | 184 | 52.1315 | 18.9332 | 12.9600 | 89.1500 | |
| GED | 179 | 20.2755 | 9.1565 | 0.0000 | 43.7500 | 1.3890 |
| ESGCON | 184 | 41.7404 | 24.6990 | 0.1100 | 63.4000 | 2.0950 |
| LEVE | 185 | 0.0794 | 0.0654 | 0.0001 | 0.4054 | 1.3350 |
| MVB | 180 | 1.2514 | 0.4493 | 0.5800 | 3.1600 | 1.3310 |
| SIZE | 185 | 7.8634 | 0.6511 | 6.9631 | 9.4105 | 2.6720 |
| DIY | 185 | 2.1860 | 1.2059 | 0.0000 | 7.4700 | 1.2840 |
| ROA | 159 | 1.1119 | 0.3487 | -0.1400 | 2.8500 | 1.1400 |

ESG = environmental social and governance performance, GED = board gender diversity, ESGCON = ESG controversies score, LEVE = leverage ratio, MVB = market to book value, SIZE = log of total asset, DIY = dividend yield, ROA = return on assets

Table 2: Pearson correlations

| Variables | (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) |
|---|---|---|---|---|---|---|---|---|
| (1) ESG | 1.0000 | | | | | | | |
| (2) GED | 0.5690** | 1.0000 | | | | | | |
| (3) ESGCON | -0.4660** | -0.1730** | 1.0000 | | | | | |
| (4) LEVE | 0.0250 | 0.1960** | -0.0760 | 1.0000 | | | | |
| (5) MVB | -0.2610** | -0.0700 | 0.3160** | -0.2100** | 1.0000 | | | |
| (6) SIZE | 0.7670** | 0.3730** | -0.6850** | 0.0920 | -0.3350** | 1.0000 | | |
| (7) DIY | -0.1780** | -0.1140 | 0.1690** | 0.1500** | 0.1290 | -0.1410 | 1.0000 | |
| (8) ROA | 0.0770 | 0.1450 | 0.0010 | 0.1860** | 0.2200** | 0.0660 | 0.2100** | 1.0000 |

** shows significance at the .05 level

ESG = environmental social and governance performance, GED = board gender diversity, ESGCON = ESG controversies score, LEVE = leverage ratio, MVB = market to book value, SIZE = log of total asset, DIY = dividend yield, ROA = return on assets

Table 3: Regression results

| | (1) DV=ESG | (2) DV=ESG | (3) DV=ESG | (4) DV=ESG | (5) DV=ESG | (6) DV=ESG |
|---|---|---|---|---|---|---|
| Lagged dependent | | | | | 0.797*** | 0.676*** |
| | | | | | (0.187) | (0.192) |
| **Independent variable** | | | | | | |
| GED | 69.192*** | 55.797*** | 56.312*** | 53.287*** | 23.979* | 36.102*** |
| | (14.894) | (17.417) | (13.868) | (16.515) | (13.926) | (10.942) |
| **Control variables** | | | | | | |
| LEVE | -47.607*** | -52.386*** | -48.343** | -51.300** | 1.446 | 1.414 |
| | (15.793) | (14.538) | (20.768) | (19.527) | (7.616) | (8.590) |
| MVB | 2.623 | 1.613 | 2.151 | 1.742 | -0.106 | -0.320 |
| | (2.477) | (2.537) | (3.471) | (3.540) | (1.591) | (1.812) |
| SIZE | 22.838*** | 24.414*** | 72.636*** | 71.497*** | 2.981 | 3.832 |
| | (2.947) | (3.008) | (11.249) | (11.510) | (2.960) | (3.523) |
| DIY | -1.145 | -1.079 | -0.733 | -0.753 | 0.324 | 0.093 |
| | (0.926) | (0.933) | (1.409) | (1.433) | (0.447) | (0.456) |
| ROA | -0.721 | -0.801 | -0.333 | -0.400 | -0.251 | 0.177 |
| | (1.456) | (1.404) | (1.254) | (1.239) | (0.959) | (1.013) |
| **Moderating effect** | | | | | | |
| ESGCON | | 0.004 | | 0.011 | | -0.016 |
| | | (0.056) | | (0.058) | | (0.046) |
| ESGCON*GED | | 0.287 | | 0.062 | | -0.084 |
| | | (0.271) | | (0.265) | | (0.238) |
| Constant | -137.082*** | -147.732*** | -528.710*** | -519.214*** | -559.202 | -1498.068 |
| | (24.284) | (23.847) | (89.971) | (91.846) | (1319.784) | (1377.602) |
| Observation | 149 | 149 | 149 | 149 | 118 | 118 |
| R-squared | 45.34% | 46.76% | 57.85% | 58.12% | | |
| Wald chi2 test (p-value) | | | | | 0.000 | 0.000 |
| Time dummies | | | | | Yes | Yes |
| Number of instruments | | | | | 13 | 15 |
| AR (1) test (p-value) | | | | | 0.030 | 0.037 |
| AR (2) test (p-value) | | | | | 0.760 | 0.855 |
| Hansen test (p-value) | | | | | 0.724 | 0.297 |
| Estimator | Random effects | Random effects | Fixed effects | Fixed effects | System GMM | System GMM |

Notes: The table reports the static and dynamic estimates of the moderating role of ESG controversies on the relationship between board gender diversity and ESG performance. AR (1) and AR (2) are tests for first and second-order serial correlation in the first-differenced residuals, under the null hypothesis of no serial correlation. The Hansen test of over-identification is under the null hypothesis that the instrument set is valid. We used the "collapse" option to prevent instrument proliferation.
Standard errors are in parenthesis. *** *p<0.01, ** p<0.05, * p<0.1*
DV= dependent variable, ESG = environmental social and governance performance, GED = board gender diversity, LEVE = leverage ratio, MVB = market to book value, SIZE = log of total asset, DIY = dividend yield, ROA = return on assets, ESGCON = ESG controversies score, ESGCON*GED = interaction variable

Table 4: Summary of tested hypothesis

| **No.** | **Hypothesis** | **Remark** |
|---|---|---|
| $H_1$ | Board gender diversity has a significant effect on environmental social and governance performance of banks. | Supported |
| $H_2$ | ESG controversies significantly moderate the relationship between board gender diversity and the ESG performance of banks. | Rejected |

## Appendix A

Table A1: Variable measurements

| Name of the variable | Description |
|---|---|
| **Dependent variable** | |
| ESG | Environmental, social and governance score of Refinitiv. |
| **Independent variables** | |
| Board gender diversity (GED) | Percentage of women directors on bank board. |
| **Control variables** | |
| Leverage (LEVE) | Long term debt/Total assets |
| Market to book value (MVB) | The market value of the common equity/The book value of the common equity |
| Size (SIZE) | Log of total assets |
| Dividend yield (DIY) | Dividend per share/Price per share |
| ROA | Net income/Total assets |
| **Moderating variable** | |
| ESGCON | ESG controversies score of Refinitiv. |
| ESGCON*GED | Interaction of ESG controversies and board gender diversity of banks. |

Table A2: Gender diversity and ESG performance

| | (3)<br>DV=ESG | (4)<br>DV=ESG |
|---|---|---|
| **Independent variable** | | |
| GED | 94.188*** | 80.933*** |
| | (10.433) | (16.129) |
| **Control variables** | | |
| LEVE | -17.574 | -16.530 |
| | (12.611) | (13.217) |
| MVB | -5.067** | -5.113** |
| | (2.274) | (2.343) |
| SIZE | 15.055*** | 15.581*** |
| | (1.545) | (1.993) |
| DIY | -1.021 | -0.983 |
| | (0.660) | (0.661) |
| ROA | 1.357 | 1.161 |
| | (2.543) | (2.597) |
| **Moderating effect** | | |
| ESGCON | | -0.052 |
| | | (0.079) |
| ESGCON*GED | | 0.310 |
| | | (0.344) |
| Constant | -75.674*** | -77.326*** |
| | (13.245) | (16.620) |
| Observation | 149 | 149 |
| R-squared | 72.50% | 72.60% |
| Estimator | Pooled OLS | Pooled OLS |

Notes: This table reports pooled OLS estimates of the moderating role of ESG controversies on the relationship between board gender diversity and ESG performance. Standard errors are in parenthesis. *** *p<0.01*, ** *p<0.05*, * *p<0.1*

DV= dependent variable, ESG = environmental social and governance performance, GED = board gender diversity, LEVE = leverage ratio, MVB = market to book value, SIZE = log of total asset, DIY = dividend yield, ROA = return on assets, ESGCON = ESG controversies score, ESGCON*GED = interaction variable