BOARD OF DIRECTORS' CHARACTERISTICS AND BANK PERFORMANCE: EVIDENCE FROM THE EGYPTIAN BANKING SECTOR

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Abstract

This paper examines the impact of the board of directors' characteristics on bank performance in an Egyptian context. Board of directors' size and composition diversity in terms of gender, nationality, and independence are used as proxies for the board of directors' characteristics. Bank performance is measured using the return on assets as an accounting-based profitability indicator besides stock return volatility as a market-based performance indicator while controlling for the bank, regulatory and country-specific characteristics. Regression analysis is performed for a sample of 21 Egyptian banks covering the period from 2012 till 2018. The results show that banks with large boards including a high proportion of female and foreign directors achieve higher performance. Also, the higher is the proportion of independent directors, the lower is the performance, which contradicts with the agency theory proponents. Most importantly, the findings provide empirical evidence that market-based performance indicators react negatively to females' directorship, while the opposite is found with independent directors as reflected in the positive market reaction. The findings are highly relevant since improved financial performance is one of the key objectives of bank supervisors and regulators to sustain economic growth.

Keywords: Board of Directors' Characteristics, Board Size, Board Diversity, Bank Performance, Egyptian Banking Sector

Authors' individual contribution: Conceptualization – S.S. and M.H.A-A.; Methodology – S.S. and M.H.A-A.; Formal Analysis – S.S.; Writing – S.S.; Funding Acquisition – S.S.

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1. INTRODUCTION

In response to the latest financial crisis of 2007-2008, the financial sector witnessed bankruptcy movements and the collapse of key international financial institutions like Alliance & Leicester, Lehman Brothers, World Bank, and others worldwide. The widespread collapse has been attributed to poor corporate governance (CG) before the crisis (DeYoung, Peng, & Yan, 2013), which manifested the vulnerability of the banking sector during the crisis (Srivastav & Hagendorff, 2016). Accordingly, CG in banks is receiving much widespread attention from both academics and regulators. In 2012, the Group of Thirty (G30) working group issued a report regarding the effectiveness of CG mechanisms in financial institutions during the latest crisis. According to that report, it is revealed that CG, particularly the board of directors (BOD), have failed in many aspects and most importantly through undertaking risky strategies, triggered by extraordinary quick

profits and higher incentives for managers (Group of Thirty, 2012). As a result, these mechanisms have failed in fulfilling the intended objective of CG in safeguarding the financial institutions, their customers, and shareholders, which in turn put the whole society in danger (Berger, Imbierowicz, & Rauch, 2016). Consequently, in February 2015, the Group of Twenty (G20) finance ministers and central banks' governors requested a revision of CG principles. The principles were subsequently presented at the May and August 2015 meetings of the G20 "*Investment and Infrastructure Working Group*", with an actual adaption by the Organization for Economic Co-operation and Development (OECD) Council on July 2015. Likewise, in July 2015 The Basel Committee on Banking Supervision (BCBS) has issued CG principles for banks known as "*Basel guidelines*" (OECD, 2015).

The literature widely recognizes BODs as the backbone for having an effective CG framework that can effectively improve the robustness of banks. However, the influence of BOD's characteristics like size, diversity in terms of gender, nationality, and independence on the bank performance (*B-Per*) is still inconclusive. Small boards are preferred as risk-reducing and performance-improving mechanisms (Liang, Xu, & Jiraporn, 2013; Abou-El-Sood, 2017; Felício, Rodrigues, Grove, & Greiner, 2018; Karkowska & Acedański, 2019). The opposite is suggested by Renée and Mehran (2012), Abdul Gafoor, Mariappan, and Thyagarajan (2018). Besides, gender diversity is supported in several studies due to the risk-averse and conventional wisdom of females on boards (Charness & Gneezy, 2012; Kamas & Preston, 2012; Miller & Ubeda, 2012; Dong, Girardone, & Kuo, 2017; Abou-El-Sood, 2019; Cardillo, Onali, & Torluccio, 2020). Even though diversity in terms of nationality is preferred due to the introduction of new expertise, knowledge, and different backgrounds to the decision-making process (Liang et al., 2013; Dong et al., 2017). It is regarded as a risky attribute (Masulis, Wang, & Xie, 2012; Rafinda, Rafinda, Witiastuti, Suroso, & Trinugroho, 2018). On the independence aspect of BOD, it is regarded as a value-adding and performance-improving attribute in addition to being a risk-reducing attribute (de Andres & Vallelado, 2008; Pathan, 2009; Liang et al., 2013; Abdul Gafoor et al., 2018; Karkowska & Acedański, 2019). On the contrary, some studies conclude that it is a non-influential feature (Simpson & Gleason, 1999; Aebi, Sabato, & Schmid, 2012; James & Joseph, 2015). To sum it up, gender diversity is preferred while nationality and independence diversity are still controversial issues. Moreover, most prior literature in this area is investigated in developed markets, with a limited focus on emerging markets.

Therefore, the main objective of this paper is to complement the existing literature in this area through examining the association between BOD's characteristics; in terms of size and composition diversity, and *B-Per* while taking into consideration the latest CG regulations issued by the Central Bank of Egypt (CBE). Furthermore, this paper aims to investigate whether BOD's characteristics can improve *B-Per*. This study is applied to banks operating in the Egyptian market which is one of the most rapidly growing emerging markets.

This paper is applied to a sample of both listed; in the Egyptian Stock Exchange (EGX), and unlisted banks covering the period from 2012 till 2018. *B-Per* is captured by accounting and market-based measures. The results show that banks with larger boards including a high proportion of female and foreign directors attain better performance. Further, the higher is the proportion of independent directors, the lower is the performance of banks, inconsistent with the agency theory. As for the market-based measure, results reveal that the market reacts negatively to females on boards and regards them as bad performers. While the opposite is found with independent directors as reflected in the positive market reaction.

The contribution of this study is twofold. First, the paper provides novel evidence on the association between board characteristics like size and composition diversity in terms of gender, nationality and independence, and *B-Per* while taking into consideration the specific nature of the Egyptian banking sector (EBS). Previous research usually concentrates on one or two of the diversity aspects, but this research considers all diversity aspects. Second, it sheds light on the latest CG initiatives of the CBE and BCBS to strengthen the BOD and increase the banking sector's resilience against any future crisis.

The remainder of the paper is organized as follows. Section 2 lays out the background. Section 3 reviews the prior literature and develops the research hypotheses. Section 4 illustrates the research design. Section 5 describes the data and sample. Section 6 reports the research results. Section 7 concludes and offers implications for further work in the future.

2. BACKGROUND

2.1. The Egyptian banking environment

The EBS has witnessed several reforms to reach its current state. In 1990, Egypt launched an extensive reform program intending to transform the economy into a market-driven economy dominated by the private sector (Hussein & Nos'hy, 2000). The banking sector decisions were targeting a more favorable lending environment and have resulted in the acceleration of the private sector interests in addition to a major expansion of credit growth. At that time, the Egyptian banking industry was concentrated and segmented, which in turn weaken the competition levels (Ben Naceur & Kandil, 2009). In 1999, Egypt was in a serious currency liquidity crisis which resulted in a recessionary economic environment that had a severe impact on the EBS. Therefore, this reform has been followed by a serious deterioration in asset quality and increasing numbers of non-performing loans (NPL) (Oxford Business Group, 2018). Later, by the end of 2002, the CBE required banks to raise the minimum capital adequacy ratio (CAR) from 8% to 10% which has created difficulties for some banks and forced them to either raise their capital or to merge with other well-capitalized banks (Jreisat, Hassan, & Shankar, 2018). By the beginning of 2003 and the floatation of the Egyptian pound against the United States dollar, many Egyptian banks suffered significant losses from foreign exchange problems especially those banks with a high percentage of investments in

foreign currency. As a result, during this year, Egyptian banks, specifically, the state-owned banks suffered from extremely high NPL ratios. This inspires the CBE to develop a new comprehensive reform program to rescue the stability of the banking sector in Egypt (Reda, 2013). In 2003, the reform started with overhauling the CBE at first in addition to increasing the partnerships between foreign and local banks (Jreisat et al., 2018, as cited in Oxford Business Group, 2018).

Likewise, in 2005, Egypt has made massive reforms to its tax structure, through reducing tax rates at both the personal and corporate levels. As a result, the banking sector benefitted a lot from this tax reform (American Chamber of Commerce in Egypt, n.d.). In addition, listed banks in EGX have gained more benefits through further tax exemption of about 10%. The CBE program helped banks to comply with Basel II guidelines. Additionally, the government started to privatize state-owned banks to enhance and intensify the levels of competition within the banking sector (Mohieldin & Nasr, 2007). This has resulted in a consolidated banking sector; to some extent, and significantly reduced the number of operating banks in Egypt[1]. By 2009, the results were apparent as the CBE commanded authority in the EBS, engaged in independent open market operations, and formulated credible monetary and foreign exchange policies. Empowered with its structural changes the CBE has successfully managed the banking reform, which has a major impact on the survival of the Egyptian economy during the latest global financial crisis (Centre for Public Impact, 2013). In 2010, Egypt was among the world's 10 most active reformers for the fourth time according to the World Bank (WB)'s 2010 *"Doing Business"* rankings. The country moved up 10 places to 106 among 183 economies worldwide for the overall ease of doing business (The World Bank, 2010). However, Egypt witnessed two successive revolutions: 2011 and 2013, which have severely influenced not only the banking sector but the whole economy. Bravely, in 2016, Egypt started its comprehensive economic reform program with the International Monetary Fund (IMF) to restore stability and increasing confidence in the Egyptian economy (IMF, 2016). As a result, Egypt has been acknowledged by the WB and International Finance Corporation in their *"Training for Reform"* 2019 for its outstanding performance on "*Doing Business*" rankings by moving 8 places up (The World Bank, 2019). Consequently, Egypt has been acknowledged for having the third most accelerated economic growth globally in the Economist's list in 2019.

2.2. Corporate governance in banks

The ultimate goal of CG is to "help build an environment of trust, transparency, and accountability necessary for fostering long-term investment, financial stability, and business integrity, thereby supporting stronger growth and more inclusive societies" (OECD, 2015, p. 7).

Yet, the application of CG mechanisms in banks is unique and different from CG applications in non-financial institutions. CG in banks is encountered by difficulties imposed by the distinctive nature of the banking industry in terms of transparency, business density, and regulation (Dalwai, Basiruddin, & Abdul Rasid, 2015; Dong et al., 2017). Additionally, banks are required to maintain a deposit insurance system to safeguard the depositors' funds. Furthermore, the banking sector is more likely to experience various risks; mostly concentric in nature, like credit risk, business risk, and market risk. Which require a customized adoption of CG mechanisms both at the micro and macro levels to preserve the stability of the banking sector (Kieff & Paredes, 2010).

BOD's role is vital for the overall effectiveness of bank governance (Group of Thirty, 2012). They are held accountable to their bank shareholders, regulators, and other stakeholders (Brender, Yzeiraj, & Fragniere, 2015). To handle their responsibilities, BOD's members should first comprehend their roles and responsibilities. Furthermore, they should make sure that the board is fully equipped with members having the required skills and qualifications. Also, they should have a supportive committee structure, communication, and reporting systems. Taking into consideration that, BOD's independence is a very important and critical feature as compared to other features (The Office of the Comptroller of the Currency, 2020).

In response to the latest financial crisis and starting from 2012, banks in Egypt are required to apply the banks' CG regulations issued by the CBE. These regulations focus on improving the ability of EBS to survive against any future shocks and crises, through strengthening the BODs' practices, structure, and supporting committees[2]. These regulations imply that the BOD's members should get any important information they need to fulfil their responsibilities on a timely, concise, and clear manner. Finally, there must be continuous communication between BOD's members and the regulatory authorities to achieve overall financial stability[3].

3. LITERATURE REVIEW AND HYPOTHESES DEVELOPMENT

3.1. Board of directors' size and bank performance

It has been argued that the smaller is the board size (BO-S), the better is the performance of banks. From an agency theory perspective, Liang et al. (2013) incorporate the influence of politically connected directors into their analysis of BODs' features, the findings confirm that BODs which are small, independent, less politically connected, and that meet more frequently are more efficient in supervising and advising functions, which in turn leads to higher performance and improves the quality of bank's assets. Likewise, the findings of Dong et al. (2017) confirm a negative association between BO-S and profit and cost-efficiency. Also, Abou-El-Sood (2017) provides evidence that as the BO-S gets larger, they may exhibit inefficiencies and difficulties regarding communication, coordination, and decision-making abilities to mitigate excessive risk-taking by their banks. Similarly, the evidence provided by Felício et al. (2018) confirm the previous findings. In contradiction, de Andres and Vallelado (2008) interestingly find that there is an inverted

[1] https://www.cbe.org.eg/en/BankingSupervision/Pages/ReformPhase2.aspx

[2] https://www.cbe.org.eg/en/BankingSupervision/Pages/Circulars.aspx?p=21

[3] https://www.cbe.org.eg/en/BankingSupervision/Pages/Circulars.aspx?p=10

U-shaped association between BO-S and *B-Per*, which contradicts the prevalent conception stating that smaller boards are more efficient. Moreover, they find that a larger number of directors help in overseeing business functions and advisory activities. Renée and Mehran (2012) also find that BO-S has a positive impact on *B-Per*. In the same line, Abdul Gafoor et al. (2018) find a significant positive association between BO-S and *B-Per*. They argue that as the BO-S increases, the BOD's role in monitoring and advising the senior management on various business issues improves. In addition, they conclude that large BOD provides more expertise to the bank. Accordingly, we hypnotize that:

H1: There is a positive association between the board of directors' size in one year and bank performance in the subsequent year.

3.2. Board of directors' composition and bank performance

First, BOD's gender diversity means the board composition in terms of females and males. Charness and Gneezy (2012) investigate whether female directors are less likely to engage in financial risks than male directors. The findings reveal that females are more risk-averse than males regarding their financial decisions. As for Kamas and Preston (2012), women are naturally characterized by conventional wisdom, meaning that they have a lower tendency to engage in certain types of competitions compared to men. They show that expected ranking is the most important trigger of men's higher tendency to enter competitions in comparison to women. Another explanation is provided taking the decision-making context into consideration, Miller and Ubeda (2012) examine whether females are more sensitive to situations that require the adaption of various fairness principles. The experimental analysis shows that female directors are more likely to adopt conditional fairness principles, which require information about the decision-making context, more than male directors. In particular, women are highly sensitive towards situations that trigger several forms of social preferences, while men are triggered by situations changing their total payoffs. Further, the evidence reported by Dong et al. (2017) confirm a positive (negative) relationship between the percentage of females on BODs and the bank profit as proxied by cost efficiency and bank risk-taking. Furthermore, Abou-El-Sood (2019) analyzes the influence of BOD's gender diversity on bank risk and finds a negative association between the ratio of women on BOD and risk-taking. She attributes the results to their better managerial control which leads to improved *B-Per* when boards have greater female representation. Likewise, Cardillo et al. (2020) examine whether having diverse boards in terms of gender help in reducing both the probability and size of public bailouts. The study finds that as the board gender diversity increases, both the likelihood to receive and the size of public bailouts decrease. Furthermore, gender diversity is positively associated with *B-Per*. Also, there is a positive association between gender diversity and dividend payout ratios. Such a result suggests a reduction in agency costs, which in turn lowers the likelihood of receiving a bailout. Thus, we posit the following hypothesis:

H2a: There is a positive association between board gender diversity in one year and bank performance in the subsequent year.

Second, concerning BOD's diversity in terms of nationality, i.e., having foreign directors on board. Dong et al. (2017) claim that foreigners can decrease the efficiency of the bank's CG in monitoring because of their high oversight costs. Correspondingly, Rafinda et al. (2018) in their examination of the impact of nationality diversity on *B-Per*, find a negative association between the proportion of foreign directors on board and *B-Per*. The premise is that foreign directors are facing difficulties while making on-going monitoring and business communication. In contrast, Masulis et al. (2012) find that foreign directors exploit their international background and expertise to improve the BOD's advisory functions and help in different foreign operations or plans concerning overseas expansion. Likewise, the findings of Liang et al. (2013) conclude that it is beneficial to have diversity in terms of nationality for several reasons since foreign directors on board improve the *B-Per* through the integration of recent technologies, managerial methods, and financial expertise. Building on this argument, the following research hypothesis is stated:

H2b: There is a positive association between board nationality diversity in one year and bank performance in the subsequent year.

Third, concerning the independence aspect of BOD diversity, Abdul Gafoor et al. (2018) find a significant positive association between BOD's independence and *B-Per* as proxied by ROA. Going with the proposition that independent directors are better monitors and thus having a higher proportion of independent directors improves the monitoring and advising roles of the BOD, which in turn enhance *B-Per*. Furthermore, Karkowska and Acedański (2019) find that high board independence constrains banks from undertaking higher levels of risks. Likewise, de Andres and Vallelado (2008) elaborate on the benefits of having a majority of outside non-executive directors. They argue that they help in controlling, providing advisory functions, and reducing the conflict of interest between stakeholders. On the contrary, the empirical evidence reported by Dong et al. (2017) shows that the inclusion of executives on boards can be beneficial to the overall *B-Per* because of their deep knowledge and work experience. Moreover, they have the potentials to transmit information both upward and downward the organizational structure, and thus enhancing the decision-making process (de Andres & Vallelado, 2008). Furthermore, Aebi et al. (2012) argue that BOD independence is negatively associated with *B-Per* during the crisis period, however, it is insignificant during non-crisis periods. The evidence is in line with the findings of Simpson and Gleason (1999). In the same vein, James and Joseph (2015) reveal that BOD independence has no significant impact on Malaysian *B-Per*. In an emerging context, Kutubi, Ahmed, and Khan (2018) find that there is an inverted U-shaped relationship between directors' busyness and *B-Per*. According to them, busy inside directors provide a significant contribution to the BOD's advising function. Moreover, they show that the resource-dependency theory, which argues that busyness improves performance by preserving the bank resources, dominates the agency theory, which assumes that directors' busyness will

eventually lead to shirking and declining performance through promoting managerial opportunism, at a lower level of busyness. Furthermore, the resource-dependency theory influence gets stronger as busyness increases and after a certain level of busyness, as illustrated by the inverted U-shaped relationship, the agency theory effect takes over. Based on these arguments, the last research hypothesis can be stated as follows:

H2c: There is a negative association between board independence in one year and bank performance in the subsequent year.

4. RESEARCH METHODOLOGY

The following regression model is used to examine the developed hypotheses *H1* through *H2c,* where *B-Per* performance is estimated as a function of the BOD's characteristics including size and composition while controlling for the bank, regulatory and country-specific characteristics[4]:

$$B\text{-}Per_{it+1} = \beta_1 + \beta_2 BO\text{-}S_{it} + \beta_3 GEN_{it} + \beta_4 NAT_{it} + \beta_5 IND_{it} + \sum_{j=1}^{n} \beta_{,j} ControLs_{jit} + \varepsilon_{it} \quad (1)$$

where, $B\text{-}Per_{it+1}$ is the dependent variable that proxies for the performance of bank *i* at year *t+1,* proxied by the ratio of net profit (loss) after tax (before transfers to general reserve and before appropriations) to average assets "ROA" as an accounting-based profitability indicator (e.g., Aebi et al., 2012; Liang et al., 2013; Ozili & Uadiale, 2017). In addition, stock return volatility is employed as a market-based measure for robustness (e.g., Abou-El-Sood, 2017).

The regression model includes four main independent variables that proxy for the BOD's characteristics. $BO\text{-}S_{it}$ is the number of BOD's members. GEN_{it} reflects the proportion of female directors on board. NAT_{it} denotes the proportion of foreign directors on board. Finally, IND_{it} indicates the proportion of non-executive directors on board.

Concerning the control variables, the first group controls for the bank-specific characteristics such as OT_{it} that controls for ownership type and it is a dummy variable that equals one if it is a state-owned bank and zero otherwise. Then, $BA\text{-}S_{it}$ controls for the bank size and is measured as the natural logarithm of total assets. Besides, DL_{it} controls for the functionality of the BOD and it is proxied as a dummy that equals one if there is a chief executive officer (CEO)/chairman duality and zero otherwise. Finally, the regulatory capital is controlled through $REG\text{-}CAP_{it}$ which is reflected in the capital adequacy ratio. The second group controls for the country-specific characteristics such as GDP_{it} that reflects gross domestic product, INF_{it} controls for the inflation rate, and the REV_{it} controls for the country political stability and it is a dummy variable that equals 1 if the year is 2011or 2013 and zero otherwise.

5. DATA AND SAMPLE

The population of this study consists of all banks registered at the CBE. The initial sample comprises 38 banks including 15 banks listed at the EGX[5] and 23 unlisted. There are some terms and conditions that must be considered such as the availability of annual reports including the BOD's data from 2012 to 2018. Concerning listed banks, the daily stock prices over the sample period must be available. Accordingly, we end with a final sample of only 21 banks due to data unavailability including 13 listed and 8 unlisted, which represents 71% of the banking sector in Egypt. From these 21 banks, only 4 are state-owned banks and the rest are private banks. For the main test, we rely on the 21 banks to measure ROA ending with 126 bank-year observations. For the robustness test, we rely on the 13 listed banks to measure the stock returns volatility ending with 78 bank-year observations. The banks' annual reports are available on the banks' websites or obtained from Egypt for Information Dissemination (EGID). Also, the daily stock prices are obtained from EGID. Finally, the IMF and IRS websites are used to get INF, GDP, and exchange rates respectively.

6. RESULTS AND DISCUSSION

6.1. Descriptive statistics

Table 1 provides descriptive statistics of the overall sample for the variables of interest. $B\text{-}Per_{it+1}$ has a mean (median) of 0.019 (0.017) ROA. On the $BO\text{-}S_{it}$, banks in our sample have 10 members on average while the minimum is a 7-members board and the largest boards include 16 members, thus most of the boards are within the recommended size worldwide. Concerning the composition diversity, in terms of gender, 9.3% of board members are females, in terms of nationality, 13.5% are foreigners, and in terms of independence, 79.4% of board members are non-executives. About 17.7% of the banks in our sample are state-owned banks.

Table A.1 (Appendix) illustrates the Pearson and Spearman correlation coefficients, according to which, NAT_{it} has the highest positive correlation as an independent variable with $B\text{-}Per_{it+1}$ with correlation coefficient ($r_{NATit} = 0.442$ significant at $p \leq 0.005$). From controls, $BA\text{-}S_{it}$ and DL_{it} have the highest positive correlation with $B\text{-}Per_{it+1}$ with correlation coefficients ($r_{BA\text{-}Sit} = 0.338$ significant at $p \leq 0.005$; $r_{DLit} = 0.212$ significant at $p \leq 0.05$). Finally, since there is no correlation coefficient ($r > 0.9$); neither among the dependent, explanatory, and control variables nor among the dependent variables, accordingly there are no multicollinearity problems.

[4] To solve endogeneity, *B-per*, the dependent variable, is expressed at *t+1,* while all the independent and control variables are expressed at *t.*

[5] https://www.egx.com.eg/en/ListedStocks.aspx

Table 1. Descriptive statistics

Variable	*N*	*Mean*	*Median*	*Minimum*	*Maximum*	*Std. deviation*
$B\text{-}Per_{it+1}$	113	0.019	0.017	-0.002	0.051	0.0104
$BO\text{-}S_{it}$	113	10.009	9.000	7.000	16.000	2.389
GEN_{it}	113	0.093	0.100	0.000	0.333	0.089
NAT_{it}	113	0.135	0.000	0.000	0.778	0.203
IND_{it}	113	0.794	0.813	0.600	1.000	0.092
$BA\text{-}S_{it}$	113	24.177	24.087	21.67	27.942	1.287
DL_{it}	113	0.460	0.000	0.000	1.000	0.501
GDP_{it}	113	0.036	0.042	0.022	0.044	0.008
INF_{it}	113	0.122	0.102	0.069	0.235	0.056
$REG\text{-}CAP_{it}$	113	0.148	0.144	0.085	0.289	0.035
OT_{it}	113	0.177	0.0000	0.000	1.000	0.383
REV_{it}	113	0.265	0.0000	0.000	1.000	0.444

Notes: $B\text{-}Per_{it+1}$ = the bank performance for bank i at year t+1 measured using ROA; $BO\text{-}S_{it}$ = the BOD size measured as the number of BOD members for bank i at year t; GEN_{it} = the proportion of women directorship on board; NAT_{it} = the proportion of foreign directorship on board; IND_{it} = the proportion of independent directors on board; $BA\text{-}S_{it}$ = the bank size which is expressed through the natural log of total assets; DL_{it} = a dummy equals 1 if there is CEO/chairman duality and zero otherwise; GDP_{it} = gross domestic product for the country; INF_{it} = inflation rate for the country; $REG\text{-}CAP_{it}$ = the capital adequacy ratio; OT_{it} = the ownership type expressed through a dummy that equals 1 if the bank is state-owned and zero otherwise; REV_{it} = a dummy equals 1 if the year has witnessed a revolution and zero otherwise.

6.2. Regression results

Table 3 shows the main test regression results where the *B-Per* is measured using ROA as an accounting-based profitability measure. It shows the association between BOD's characteristics, including $BO\text{-}S_{it}$ and composition diversity in terms of gender, nationality, and independence as CG's indicators, and $B\text{-}Per_{it+1}$ while controlling for bank-specific, regulatory and country-specific characteristics. The results indicate a strong positive association between $B\text{-}Per_{it+1}$ and $BO\text{-}S_{it}$ with $\beta = 0.266$ significant at the 1% level, supporting our prediction in *H1*. On the composition diversity aspect, *B-Per* has a strong positive association with GEN_{it} and NAT_{it} diversity as expected in *H2a* and *H2b* with $\beta_{GENit} = 0.322$ and $\beta_{NATit} = 0.411$ significant at the 1% level. Furthermore, in line with our expectations in *H2c*, *B-Per* shows a strong negative association with IND_{it} with $\beta = 0.175$ significant at 5%. With regard to the control variables, both $BA\text{-}S_{it}$ and $REG\text{-}CAP_{it}$ have a strong positive association with $B\text{-}Per_{it+1}$ with $\beta_{BA\text{-}SIt} = 0.345$ and $\beta_{REG\text{-}CAPit} = 0.245$ significant at the 1% level while OT_{it} shows a negative association with $B\text{-}Per_{it+1}$ with $\beta_{OTIt} = 0.189$ significant at the 5% level.

Table 3. The regression results

	Standardized coefficients	*t*
(Constant)		-2.458
$BO\text{-}S_{it}$	0.266	3.332***
GEN_{it}	0.322	3.576***
NAT_{it}	0.411	5.117***
IND_{it}	-0.175	-2.155**
$BA\text{-}S_{it}$	0.345	3.464***
DL_{it}	0.012	0.137
GDP_{it}	0.106	1.051
INF_{it}	-0.120	-1.407
$REG\text{-}CAP_{it}$	0.245	3.047***
OT_{it}	-0.189	-2.108**
REV_{it}	-0.106	-1.043
No.of OBS	113	
Adjusted R^2	42.7%	
Sig.	0.000	
Durbin Watson	1.858	

Notes: $BO\text{-}S_{it}$ = the BOD size measured as the number of BOD members for bank i at year t; GEN_{it} = the proportion of women directorship on board; NAT_{it} = the proportion of foreign directorship on board; IND_{it} = the proportion of independent directors on board; $BA\text{-}S_{it}$ = the bank size which is expressed through the natural log of total assets; DL_{it} = a dummy equals 1 if there is CEO/chairman duality and zero otherwise; GDP_{it} = gross domestic product for the country; INF_{it} = inflation ratefor the country; $REG\text{-}CAP_{it}$ = the capital adequacy ratio; OT_{it} = the ownership type expressed through a dummy that equals 1 if the bank is state-owned and zero otherwise; REV_{it} = a dummy equals 1 if the year has witnessed a revolution and zero otherwise.

, **, and * denote 10%, 5%, and 1% significance, respectively.*

6.3. Robustness tests

B-Per is measured using stock return volatility as a market-based measure following (Adams & Mehran, 2012; Abou-El-Sood, 2017). The lower is the volatility, the higher is the performance. Thus, any variable with a positive association with the stock volatility has a negative association with *B-Per*. The robustness test supports the main test regarding *BO-S* and *NAT* association with *B-Per*. However, against the main test, there is a negative association between *B-Per* and *GEN* diversity showing the negative market perception regarding the influence of women directors on *B-Per*, as the results show that the higher the proportion of female directors on board, the higher is the volatility which is similar to Bennouri, Chtioui, Nagati, and Nekhili (2018). Also, against our expectation there is a positive association between *IND* and *B-Per*, as the results show that the higher is the proportion

of independent directors on board, the lower is the stock volatility as supported by Pathan (2009), Karkowska and Acedański (2019), who contend that board independence is a risk-reducing attribute beside being a value-adding and performance-improving attribute as provided by de Andres and Vallelado (2008), Liang et al. (2013), Abdul Gafoor et al. (2018).

Table 4. The robustness test results

	Standardized coefficients	***t***
(Constant)		7.094
BO-S$_{it}$	-0.150	-1.505
GEN$_{it}$	0.237	1.934*
NAT$_{it}$	-0.154	-1.384
IND$_{it}$	-0.338	-3.219***
BA-S$_{it}$	-0.658	-5.664***
DL$_{it}$	0.196	1.773*
GDP$_{it}$	0.008	.062
INF$_{it}$	-0.120	-1.034
REG-CAP$_{it}$	-0.072	-0.711
OT$_{it}$	-0.358	-3.114***
REV$_{it}$	-0.049	-0.378
No.of OBS	74	
Adjusted R^2	42.5%	
Sig.	0.000	
Durbin Watson	1.717	

Notes: BO-S$_{it}$ = the BOD size measured as the number of BOD members for bank i at year t; GEN$_{it}$ = the proportion of women directorship on board; NAT$_{it}$ = the proportion of foreign directorship on board; IND$_{it}$ = the proportion of independent directors on board; BA-S$_{it}$ = the bank size which is expressed through the natural log of total assets; DL$_{it}$ = a dummy equals 1 if there is CEO/chairman duality and zero otherwise; GDP$_{it}$ = gross domestic product for the country; INF$_{it}$ = inflation ratefor the country;REG-CAP$_{it}$ = the capital adequacy ratio; OT$_{it}$ = the ownership type expressed through a dummy that equals 1 if the bank is state-owned and zero otherwise; REV$_{it}$ = a dummy equals 1 if the year has witnessed a revolution and zero otherwise.

, **, and * denote 10%, 5%, and 1% significance, respectively.*

7. CONCLUSION

The main objective of this paper is to examine the association between *B-Per* and BOD's characteristics including size and composition diversity in terms of gender, nationality, and independence. This study is of particular relevance to the latest CBE (2017)[6] and BCBS (BIS, 2015) CG initiatives which focus on improving CG applications in the banking sector with a significant emphasis on the BOD to strengthen banks' resilience against any future shocks and crises. Two performance indicators are employed: ROA as an accounting-based measure and stock return volatility as a market-based measure for robustness. The results go in line with our expectations showing that banks with large boards including a higher proportion of female and foreign directors achieve better performance. In addition, we find a significant negative association between the proportion of independent directors and performance, supporting the resource-dependency theory. According to which, insider executives on board improve performance by preserving banks' resources which contradicts with the agency theory proponents. However, the robustness test reveals that the market reacts negatively to having females on boards and regards them as bad influencers on performance, supporting the findings of Bennouri et al. (2018). Solal and Snellman (2019) justify the results based on the bias of the stock market against women supported by the assumption that women lack the competencies needed for decision-making. While the opposite is found with independent directors as reflected in the positive market reaction, similar evidence is provided by Pathan (2009), Karkowska and Acedański (2019), who show that board independence is a risk-reducing attribute. However, this study has some limitations as follows: the sample is small because of data unavailability. Besides, concerning the main test performance measure, ROA, it is blamed to be a backward-looking indicator which is relying on accounting information only (Chieng, 2013), so future research using different performance metrics would be valuable. Finally, we did not investigate whether the differences between conventional banks and Islamic banks in our sample would provide deeper insights, so further analysis is recommended while taking these differences into consideration.

[6] https://www.cbe.org.eg/en/BankingSupervision/Pages/Circulars.aspx?p=11

REFERENCES

1. Abdul Gafoor, C., Mariappan, V., & Thyagarajan, S. (2018). Board characteristics and bank performance in India. *IIMB Management Review, 30*(2), 160-167. https://doi.org/10.1016/j.iimb.2018.01.007
2. Abou-El-Sood, H. (2017). Corporate governance structure and capital adequacy: Implications to bank risk taking. *International Journal of Managerial Finance, 13*(2), 165-185. https://doi.org/10.1108/IJMF-04-2016-0078
3. Abou-El-Sood, H. (2019). Corporate governance and risk taking: The role of board gender diversity. *Pacific Accounting Review, August, 31*(1), 19-42. https://doi.org/10.1108/PAR-03-2017-0021
4. Adams, R. B., & Mehran, H. (2012). Bank board structure and performance: Evidence for large bank holding companies. *Journal of Financial Intermediation, 21*(2), 243-267. https://doi.org/10.1016/j.jfi.2011.09.002
5. Aebi, V., Sabato, G., & Schmid, M. (2012). Risk management, corporate governance, and bank performance in the financial crisis. *Journal of Banking & Finance, 36*(12), 3213-3226. https://doi.org/10.1016/j.jbankfin.2011.10.020
6. American Chamber of Commerce in Egypt. (n.d.). *Guide to doing business in Egypt*. Retrieved from https://www.amcham.org.eg/information-resources/trade-resources/doing-business-in-egypt/taxation
7. Bank for International Settlements (BIS). (2015). *Guidelines: Corporate governance principles for banks*. Retrieved from https://www.bis.org/bcbs/publ/d328.pdf
8. Bathala, C. T., & Rao, R. P. (1995). The determinants of board composition: An agency theory perspective. *Managerial and Decision Economics, 16*(1), 59-69. https://doi.org/10.1002/mde.4090160108
9. Ben Naceur, S., & Kandil, M. (2009). The impact of capital requirements on banks' cost of intermediation and performance: The case of Egypt. *Journal of Economics and Business, 61*(1), 70-89. https://doi.org/10.1016/j.jeconbus.2007.12.001
10. Bennouri, M., Chtioui, T., Nagati, H., & Nekhili, M. (2018). Female board directorship and firm performance: What really matters? *Journal of Banking and Finance, 88,* 267-291. https://doi.org/10.1016/j.jbankfin.2017.12.010
11. Berger, A. N., Imbierowicz, B., & Rauch, C. (2016). The roles of corporate governance in bank failures during the recent financial crisis. *Journal of Money, Credit and Banking, 48*(4), 729-770. https://doi.org/10.1111/jmcb.12316
12. Brender, N., Yzeiraj, B., & Fragniere, E. (2015). The management audit as a tool to foster corporate governance: An inquiry in Switzerland. *Managerial Auditing Journal, 30*(8/9), 785-811. https://doi.org/10.1108/MAJ-03-2014-1013
13. Cardillo, G., Onali, E., & Torluccio, G. (2020). Does gender diversity on banks' boards matter? Evidence from public bailouts. *Journal of Corporate Finance*. Advance online publication. https://doi.org/10.1016/j.jcorpfin.2020.101560
14. Centre for Public Impact. (2013, March 23). *Reforming the Central Bank in Egypt*. Retrieved from https://www.centreforpublicimpact.org/case-study/reforming-central-bank-egypt/
15. Charness, G., & Gneezy, U. (2012). Strong evidence for gender differences in risk taking. *Journal of Economic Behavior & Organization, 83*(1), 50-58. https://doi.org/10.1016/j.jebo.2011.06.007
16. Chieng, J. R. (2013). *Verifying the validity of Altman's Z" score as a predictor of bank failures in the case of the Eurozone* (Master's thesis, National College of Ireland). Retrieved from http://norma.ncirl.ie/865/
17. Cremers, K. J. M., & Nair, V. B. (2005). Governance mechanisms and equity prices. *The Journal of Finance, 60*(6), 2859-2894. https://doi.org/10.1111/j.1540-6261.2005.00819.x
18. Dalwai, T. A. R., Basiruddin, R., & Abdul Rasid, S. Z. (2015). A critical review of relationship between corporate governance and firm performance: GCC banking sector perspective. *Corporate Governance, 15*(1), 18-30. https://doi.org/10.1108/CG-04-2013-0048
19. de Andres, P., & Vallelado, E. (2008). Corporate governance in banking: The role of the board of directors. *Journal of Banking & Finance, 32*(12), 2570-2580. https://doi.org/10.1016/j.jbankfin.2008.05.008
20. DeYoung, R., Peng, E. Y., & Yan, M. (2013). Executive compensation and business policy choices at U.S. commercial banks. *Journal of Financial and Quantitative Analysis, 48*(1), 165-196. https://doi.org/10.1017/S0022109012000646
21. Dong, Y., Girardone, C., & Kuo, J.-M. (2017). Governance, efficiency and risk taking in Chinese banking. *The British Accounting Review, 49*(2), 211-229. https://doi.org/10.1016/j.bar.2016.08.001
22. Felício, J. A., Rodrigues, R., Grove, H., & Greiner, A. (2018). The influence of corporate governance on bank risk during a financial crisis. *Economic Research-Ekonomska Istraživanja, 31,* 1078-1090. https://doi.org/10.1080/1331677X.2018.1436457
23. Group of Thirty. (2012). *Toward effective governance of financial institutions*. Retrieved from https://group30.org/images/uploads/publications/G30_TowardEffectiveGovernance.pdf
24. Hussein, K. A., & Nos'hy, A. (2000). *What caused the liquidity crisis in Egypt?* Retrieved from https://www.academia.edu/34710719/What_caused_the_liquidity_crisis_in_Egypt
25. International Monetary Fund (IMF). (2016, November 11). *Press release No. 16/501: IMF executive board approves US$12 billion extended arrangement under the extended fund facility for Egypt*. Retrieved from https://www.imf.org/en/News/Articles/2016/11/11/PR16501-Egypt-Executive-Board-Approves-12-billion-Extended-Arrangement
26. James, B. J., & Joseph, C. (2015). Corporate governance mechanisms and bank performance: Resource-based view. *Procedia Economics and Finance, 31,* 117-123. https://doi.org/10.1016/S2212-5671(15)01138-7
27. Jensen, M. C. (1993). The modern industrial revolution, exit, and the failure of internal control systems. *Journal of Finance, 48*(3), 831-857. https://doi.org/10.1111/j.1540-6261.1993.tb04022.x
28. Jreisat, A., Hassan, H., & Shankar, S. (2018). Determinants of the productivity change for the banking sector in Egypt. *Global Tensions in Financial Markets, 34*(1), 89-116. https://doi.org/10.1108/S0196-382120170000034011
29. Kamas, L., & Preston, A. (2012). The importance of being confident: Gender, career choice, and willingness to compete. *Journal of Economic Behavior & Organization, 83*(1), 82-97. https://doi.org/10.1016/j.jebo.2011.06.013
30. Karkowska, R., & Acedański, J. (2019). The effect of corporate board attributes on bank stability. *Portuguese Economic Journal, 19,* 99-13. https://doi.org/10.1007/s10258-019-00162-3
31. Kieff, F. S., & Paredes, T. A. (2010). *Perspectives on corporate governance*. England, the UK: Cambridge University Press.

32. Kutubi, S. S., Ahmed, K., & Khan, H. (2018). Bank performance and risk-taking – Does directors' busyness matter? *Pacific-Basin Finance Journal, 50,* 184-199. https://doi.org/10.1016/j.pacfin.2017.02.002
33. Lasfer, M. A. (2006). The interrelationship between managerial ownership and board structure. *Journal of Business Finance and Accounting, 33*(7-8), 1006-1033. https://doi.org/10.1111/j.1468-5957.2006.00600.x
34. Liang, Q., Xu, P., & Jiraporn, P. (2013). Board characteristics and Chinese bank performance. *Journal of Banking & Finance, 37*(8), 2953-2968. https://doi.org/10.1016/j.jbankfin.2013.04.018
35. Masulis, R., Wang, C., & Xie, F. (2012). Globalizing the boardroom – The effects of foreign directors on corporate governance and firm performance. *Journal of Accounting and Economics, 53*(3), 527-554. https://doi.org/10.1016/j.jacceco.2011.12.003
36. Miller, L., & Ubeda, P. (2012). Are women more sensitive to the decision-making context? *Journal of Economic Behavior & Organization, 83*(1), 98-104. https://doi.org/10.1016/j.jebo.2011.06.014
37. Mohieldin, M., & Nasr, S. (2007). On bank privatization: The case of Egypt. *The Quarterly Review of Economics and Finance, 46*(5), 707-725. https://doi.org/10.1016/j.qref.2006.08.011
38. Myers, S. C., & Rajan, R. G. (1998). The paradox of liquidity. *Quarterly Journal of Economics, 113*(3), 733-771. https://doi.org/10.1162/003355398555739
39. OECD. (2015). *G20/OECD principles of corporate governance*. http://doi.org/10.1787/9789264236882-en
40. Oxford Business Group. (2018). *The report: Egypt 2018*. Retrieved from https://oxfordbusinessgroup.com/egypt-2018
41. Ozili, P. K., & Uadiale, O. (2017). Ownership concentration and bank profitability. *Future Business Journal, 3*(2), 159-171. https://doi.org/10.1016/j.fbj.2017.07.001
42. Pathan, S. (2009). Strong boards, CEO power and bank risk-taking. *Journal of Banking & Finance, 33*(7), 1340-1350. https://doi.org/10.1016/j.jbankfin.2009.02.001
43. Rafinda, A., Rafinda, A., Witiastuti, R. S., Suroso, A., & Trinugroho, I. (2018). Board diversity, risk and sustainability of bank performance: Evidence from India. *Journal of Security and Sustainability Issues, 7*(4), 793-806. https://doi.org/10.9770/jssi.2018.7.4(15)
44. Reda, M. (2013). *The effect of mergers and acquisitions on bank efficiency: Evidence from bank consolidation in Egypt* (The Egyptian Center for Economics Studies Working Paper No. 770). Retrieved from https://erf.org.eg/publications/effect-mergers-acquisitions-bank-efficiency-evidence-bank-consolidation-egypt/
45. Simpson, W., & Gleason, A. E. (1999). Board structure, ownership, and financial distress in banking firms. *International Review of Economics and Finance, 8*(3), 281-292. https://doi.org/10.1016/S1059-0560(99)00026-X
46. Solal, I., & Snellman, K. (2019, November 25). Why investors react negatively to companies that put women on their boards. *Harvard Business Review*. Retrieved from https://hbr.org/2019/11/why-investors-react-negatively-to-companies-that-put-women-on-their-boards
47. Srivastav, A., & Hagendorff, J. (2016). Corporate governance and bank risk-taking. *Corporate Governance: An International Review, 24*(3), 334-345. https://doi.org/10.1111/corg.12133
48. The Office of the Comptroller of the Currency (OCC). (2020). *The director's book: Role of directors for national banks and federal savings associations.* Retrieved from https://www.occ.treas.gov/publications-and-resources/publications/banker-education/files/directors-book.html
49. The World Bank. (2010). *Doing business 2010: Reforming through difficult times.* Retrieved from https://www.doingbusiness.org/content/dam/doingBusiness/media/Annual-Reports/English/DB10-FullReport.pdf
50. The World Bank. (2019). *Doing business 2019: Training for reform* (A World Bank Group Flagship Report, 16th ed.). Retrieved from https://www.doingbusiness.org/content/dam/doingBusiness/media/Annual-Reports/English/DB2019-report_web-version.pdf

APPENDIX

Table A.1. Pearson and Spearman correlation coefficients

	$B\text{-}Per_{it+1}$	$BO\text{-}S_{it}$	DL_{it}	GEN_{it}	NAT_{it}	IND_{it}	$BA\text{-}S_{it}$	GDP_{it}	INF_{it}	$REG\text{-}CAP_{it}$	OT_{it}	REV_{it}
$B\text{-}Per_{it+1}$		.042 (.328)	.212* (.012)	.259** (.003)	.442** (.000)	-.220** (.010)	.338** (.000)	.173* (.033)	.071 (.228)	.016 (.433)	-.103 (.139)	-.155 (.051)
$BO\text{-}S_{it}$	.098 (.151)		.123 (.096)	-.167* (.039)	-.034 (.360)	.131 (.083)	-.322** (.000)	-.085 (.186)	-.100 (.147)	-.024 (.401)	.018 (.426)	.158* (.047)
DL_{it}	.161* (.044)	.123 (.098)		.295** (.001)	.263** (.002)	.013 (.444)	-.006 (.476)	-.065 (.247)	-.088 (.177)	-.220** (.010)	-.149 (.058)	.088 (.176)
GEN_{it}	.131 (.084)	-.165* (.040)	.311** (.000)		.000 (.498)	.101 (.144)	.315** (.000)	.121 (.100)	.107 (.129)	-.232** (.007)	.361** (.000)	-.113 (.116)
NAT_{it}	.522** (.000)	-.075 (.214)	.341** (.000)	.071 (.226)		.058 (.270)	.058 (.271)	-.113 (.117)	-.065 (.247)	-.064 (.251)	-.310** (.000)	.111 (.122)
IND_{it}	-.184* (.026)	.092 (.166)	-.043 (.326)	.106 (.131)	.093 (.164)		-.371** (.000)	-.168* (.038)	-.124 (.096)	.020 (.418)	-.023 (.404)	.135 (.076)
$BA\text{-}S_{it}$	.477** (.000)	-.212* (.012)	.056 (.280)	.268** (.002)	.188* (.023)	-.402** (.000)		.282** (.001)	.255** (.003)	-.319** (.000)	.334** (.000)	-.287** (.001)
GDP_{it}	.121 (.100)	-.043 (.325)	-.039 (.341)	.083 (.190)	-.093 (.163)	-.163* (.042)	.224** (.009)		.444** (.000)	-.159* (.046)	.040 (.336)	-.672** (.000)
INF_{it}	.088 (.177)	-.098 (.151)	-.093 (.164)	.092 (.165)	-.127 (.090)	-.208* (.014)	.321** (.000)	.648** (.000)		.034 (.361)	.029 (.379)	-.477** (.000)
$REG\text{-}CAP_{it}$	.093 (.165)	.033 (.364)	-.179* (.029)	-.218* (.010)	-.072 (.226)	-.016 (.432)	-.285** (.001)	-.144 (.065)	-.017 (.431)		-.135 (.077)	.095 (.159)
OT_{it}	-.069 (.234)	-.025 (.398)	-.149 (.058)	.393** (.000)	-.362** (.000)	-.011 (.455)	.200* (.017)	.035 (.358)	.046 (.314)	-.118 (.106)		-.069 (235)
REV_{it}	-.116 (.110)	.152 (.054)	.088 (.176)	-.108 (.128)	.123 (.097)	.150 (.056)	-.285** (.001)	-.589** (.000)	-.776** (.000)	.085 (.185)	-.069 (.235)	

*Notes: * Correlation is significant at the 0.05 level (1-tailed). ** Correlation is significant at the 0.01 level (1-tailed).*

Pearson above diagonal in bold and p-values in parentheses. $B\text{-}Per_{it+1}$ = the bank performance for bank i at year t+1 measured using ROA; $BO\text{-}S_{it}$ = the BOD size measured as the number of BOD members for bank i at year t; GEN_{it} = the proportion of women directorship on board; NAT_{it} = the proportion of foreign directorship on board; IND_{it} = the proportion of independent directors on board; $BA\text{-}S_{it}$ = the bank size which is expressed through the natural log of total assets; DL_{it} = a dummy equals 1 if there is CEO/chairman duality and zero otherwise; GDP_{it} = gross domestic product for the country; INF_{it} = inflation ratefor the country; $REG\text{-}CAP_{it}$ = the capital adequacy ratio; OT_{it} = the ownership type expressed through a dummy that equals 1 if the bank is state-owned and zero otherwise; REV_{it} = a dummy equals 1 if the year has witnessed a revolution and zero otherwise.