

The effect of women executives on bank risk: evidence from Indonesia

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Abstract

This study examined the effect of women executives on bank risk in banks listed on the Indonesia Stock Exchange between 2017 and 2021. Women executives served as the independent variable. The dependent variable was bank risk, which is a proxy for non-performing loans and capital adequacy ratio. The financial statements of banks listed on the Indonesia Stock Exchange from 2017-2021 were used as the data source. This study used the purposive sampling method to select the sample. Panel data with the fixed effect model approach was applied in this study as the research model. According to the findings, women CEOs do not significantly affect non-performing loans and capital adequacy ratios. This is because there are no regulations requiring gender equality on company management boards, particularly in Indonesian banks, as well as challenges from social society toward women.

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1. Introduction

Banks, as intermediate entities, play a significant role in the national economy by channeling funds from fund owners (fund suppliers) to fund receivers (fund users) (Putera, 2020). Of course, banks consistently confront risks. The value of non-performing loans (NPLs) and capital adequacy ratio (CAR) may be used to calculate banking risk (OJK, 2016). Companies must have an effective risk management plan since these activities determine the company's sustainability and growth (Khaw and Liao, 2018). Implementing a robust governance framework, also known as good corporate governance (GCG), will aid an organization in developing the best approach to mitigating potential risks (Mathew et al., 2018).

Researchers have long been interested in determining the impact of gender variations on risk choice, and women directors have been found to be psychologically more risk-averse than male directors (Adhikari et al., 2018; Dong et al., 2017; Faccio et al., 2017). Hoang et al. (2021) discovered that women CEOs are perceived to be more capable of leading a corporation efficiently in the face of economic crises than their male counterparts. According to Bernile et al. (2017), diversity on the management board can reduce the company's risk by increasing the variety of factors in decision-making and dispute resolution. Diversity can also increase the quality of choices made by the board. Another study found that women executives had a significant and beneficial influence on bank risk (Adams and Funk, 2013). However, other academics, such as Hoang et al. (2021) and Tran (2020), contend that having women CEOs on a management board does not lower bank risk. Based on the background description and differences from previous studies, this study aims to evaluate the relationship between women executives and bank risk among banks listed on the Indonesia Stock Exchange (IDX) from 2017–2021.

2. Literature review and hypothesis development

2.1. Resource dependence theory

Board members monitor and access external information from diverse sources (Biswas and Kumar, 2022). According to the resource dependence theory, the board of directors becomes a provider of resources such as advice and advice, power rights, information channels between the company and external parties, and special access to other important resources outside the company that are typically controlled by stakeholders (Pekovic and Vogt, 2021).

The presence of women leaders in a firm, both on the management board and the board of directors, indicates diversity in the firm's board composition (Chatjuthamard et al., 2021). The more diversified a board's members, the more diverse and valuable the company's resources. Furthermore, the availability of unique information could boost the management board's involvement (Innayah et al., 2021).

The variety of the firm board's composition influences its resources such as board knowledge, board experience, legitimacy, and reputation (Agyemang-Mintah and Schadewitz, 2017). Per resource dependence theory, the presence of female directors on corporate boards strengthens the links between businesses and stakeholders, lending legitimacy to diverse vital stakeholders such as workers, consumers, and investors (Liu, 2021). Women CEOs have distinct and valued resources and, thus, are seen as effective communicators between the company, external resources, and the environment on which the organization depends (Martínez et al., 2020).

Women on boards have better social skills than men on boards, which can help companies reduce the uncertainty associated with their reliance on the external environment. This improves board decision-making and information flow (Galletta et

al., 2021). According to Adeabah (2019), the board offers resources, including women's representation, to help management in "grey zones" and to limit uncertainty from external dependencies.

2.2. *Bank risk*

Accounting-based metrics, such as credit risk, can be used to assess bank risks (Dahir et al., 2018). They defined credit risk as the threat that arises from a business partner (counterparty) or debtor experiencing uncertainty or failing to meet their commitments to pay for credit granted by the bank. According to Santosa et al. (2020), credit risk is a loss that is incurred when the borrower is unable or unwilling to perform or pay its commitments until they are due. These occurrences can be reduced by applying risk management, which begins with identifying, measuring, monitoring, and managing portfolio risks (Santosa et al., 2020). A bank's ability to manage credit that has been issued to debtors, where the bank must recollect the credit that has been given to limit the possibility of debtor default. Credit payment failure by the debtor is defined as "no payment" made by the debtor to pay off the principal and interest owed to the bank (Mosey et al., 2018).

Loan risk analysis, for instance, is an integral part of the lending business for financial firms. Banks must adhere to tight supervision when meeting capital requirements and dealing with a financial crisis (Belas et al., 2018). Lenders' key concerns are mainly tied to making decisions on evaluating specific credit risks (Wang et al., 2020). Thus, it appears that credit risk management must be developed to be carried out continually. Banks must actively assess customers who may be in arrears so that banks can anticipate this from the beginning. Indonesia regulates bank risk measurements based on the NPL ratio and CAR in Bank Indonesia Regulation Number 21/12/PBI/2019 concerning amendments to Bank Indonesia Regulation Number 20/4/PBI/2018 Concerning Macroprudential Intermediation Ratios and Macroprudential Liquidity Buffers for Conventional Commercial Banks, Islamic Commercial Banks, and Islamic Business Units (Bank Indonesia, 2019).

2.3. *Hypothesis development*

According to Hoang et al. (2021), firms with women CEOs experience lower financial risk than companies with male CEOs. In recent years, many studies have analyzed the effects of having women on corporate boards. These women provide greater transparency in financial and accounting information. Regarding risk-taking, women tend to be more risk-averse than men (Rocca et al., 2019). Previous results show that firms with women CEOs consistently have high levels of capital, which is reflected in the CAR (Skala and Weill, 2018). Such outcomes are in line with Khoirotunnisa's (2021) findings, which show that the presence of female CEOs positively affects CAR, thereby reducing risk. Other researchers have found that having women on boards enhances board oversight (Baker and Lopez, 2019).

H1: Women executives have a negative and significant effect on bank risk.

3. **Research methods**

3.1 *Data and samples*

This research investigates the effect of women executives on bank risk. The study population comprises all banks registered on the IDX between 2017 and 2021. Purposive sampling was used to collect samples. The researchers employed the following criteria: banks listed on the IDX from 2017-2021, banks that use rupiah units in their financial reports, banks that do not engage in mergers and acquisitions or corporate actions, and banks with complete financial reports.

Table 1. Sampling criteria

Sample criteria	Number of banks
Banking firms listed on the Indonesia Stock Exchange (IDX) between 2017 and 2021	44
Banking companies that did not use rupiah units in their financial statements from 2017-2021	(1)
Banking companies that carried out corporate mergers and acquisitions from 2017-2021	(1)
Banking companies that did not have complete financial statements	(1)
Total sample	41
Total observations	204

3.2 Research variables

3.2.1 Independent variable

The independent variable is a proxy for the number of women on the board and the female CEO.

3.2.2 Dependent variable

The dependent variable is bank risk. NPLs and CAR were used to measure bank risk.

3.2.3 Control variables

The control variables are the firm size, board of commissioner size, the proportion of foreign board of commissioners, and the proportion of independent commissioners.

3.3 Regression model

This study employs balanced panel data. Below is the regression equation model for this study:

$$BRiskNPL = \beta_0 + \beta_1 WCEO_{it} + \beta_2 TotalWBoard_{it} + \beta_3 FSIZE_{it} + \beta_4 COMSIZE_{it} + \beta_5 FORGPR_{it} + \beta_6 INDPR_{it} + e_{it}$$

$$BRiskCAR = \beta_0 + \beta_1 WCEO_{it} + \beta_2 TotalWBoard_{it} + \beta_3 FSIZE_{it} + \beta_4 COMSIZE_{it} + \beta_5 FORGPR_{it} + \beta_6 INDPR_{it} + e_{it}$$

where:

β_0 = Constant (intercept)

$\beta_1 \dots \beta_6$ = Regression coefficient (slope)

BRisk = Bank risk (NPL and CAR)

WCEO = Female CEO

TotalWBoard = Number of women on management board

FSIZE = Firm size (Ln total assets)

COMSIZE = Size of the board of commissioners

FORGPR = Proportion of foreign commissioners
 INDPR = Proportion of independent commissioners
 e = Error
 it = i_{th} object and t_{th} time

4. Results and discussion

4.1 Descriptive statistics

A descriptive statistical analysis was used to describe the variables (Table 1). The researcher conducted a descriptive statistical analysis consisting of the average (mean), median, maximum value, minimum value, and standard deviation obtained from each sample of banking firms listed on the IDX from 2017-2021. In total, 41 banking companies and 204 observations were observed as a result of winsorizing. This process was carried out using Stata 17 with a winsorizing level of 1%-99% to minimize data outliers.

Table 1. Descriptive statistics

Variable	Obs	Mean	Std. dev.	Min	Max
NPL	204	0.0182	0.0149	0.0002	0.0992
CAR	204	0.2664	0.1793	0.1004	1.6992
WCEO	204	0.0735	0.2616	0.0000	1.0000
TotalWBoard	204	1.8431	1.6415	0.0000	7.0000
FSize	204	31.2793	1.7653	27.2226	35.0844
COMMSize	204	4.8873	2.0347	2.0000	11.0000
FORGPR	204	0.1162	0.1902	0.0000	0.5000
INDPR	204	0.5739	0.1023	0.2500	1.0000

4.2 Multicollinearity test

A multicollinearity test was used to determine the correlation between variables. The magnitude of a correlation value equal to or greater than 0.80 indicates multicollinearity.

Table 2. Correlation matrix

	NPL	CAR	WCEO	TotalWBoard	FSize	COMMSize	FORGPR
NPL	1						
CAR	-0.24***	1					
WCEO	-0.16**	0.09	1				
TotalWBoard	-0.09	-0.14**	0.15**	1			
FSize	-0.28***	-0.35***	-0.08	0.28***	1		
COMMSize	-0.18**	-0.23***	0.008	0.19***	0.79***	1	
FORGPR	-0.05	-0.003	0.05	-0.0002	0.13*	0.34***	1
INDPR	0.07	-0.13*	0.04	-0.01	-0.13*	-0.22***	-0.24***

According to the data in Table 2, there is no multicollinearity since there is no correlation coefficient among variables with a value greater than 0.80. The investigation can then infer that there is no association between variables.

4.3 Regression test

This study explores the effect of female CEOs on bank risk. A dummy variable was used to evaluate women CEO existence capital, whereas NPL and CAR were used to quantify bank risk.

Table 3. Women CEO regression on bank risk

Y	NPL	CAR	Y	NPL	CAR
	FEM	FEM		FEM	FEM
WCEO	-0.0027 (0.498)	0.0099 (0.818)	TotalWBoard	-0.0005 (0.593)	0.0100 (0.343)
FSize	-0.0036* (0.074)	0.0619*** (0.004)	FSize	-0.0038* (0.061)	0.0629*** (0.004)
COMMSize	-0.0022** (0.049)	0.0077 (0.510)	COMMSize	-0.0021* (0.057)	0.0062 (0.593)
FORGPR	0.0038 (0.745)	0.332*** (0.007)	FORGPR	0.004 (0.728)	0.3478*** (0.005)
INDPR	0.0025 (0.793)	-0.0646 (0.519)	INDPR	0.024 (0.797)	-0.0728 (0.466)
R ²	0.0714	0.0769	R ²	0.0722	0.0748
Prob>F	0.1281	0.0004	Prob>F	0.1364	0.0003
Obs	204	204	Obs	204	204

*** p<0.01, ** p<0.05, * p<0.1 indicate statistical significance at the 1%, 5% and 10% level respectively (two-tailed).

The regression findings suggest that women executives (WCEO and TotalWBoard) had a negative but non-significant influence on bank risk (NPL). The presence of a women CEO and women managers on boards of banks reduces the value of NPLs, thereby lessening the bank's risk. WCEO, in particular, produces a negative result (= -0.0027), as does TotalWBoard (= -0.0005). The probability values of 0.498 (p>0.1) for the WCEO proxy and 0.593 (p>0.1) for the TotalWBoard proxy imply that from 2017-2021, women CEOs impacted (but not significantly) the NPL of banks listed on the IDX.

The findings of a regression on women executives (WCEO and TotalWBoard) indicate a beneficial impact on bank risk (CAR). The presence of female CEOs and female board members in banks raises the CAR value, thus lowering bank risk. $\beta = 0.01$. The probability values of 0.818 (p>0.1) for the WCEO proxy and 0.343 (p>0.1) for the TotalWBoard proxy indicate that women CEOs had an influence (though not a significant one) on the CAR of banks listed on the IDX from 2017-2021.

5. Conclusions and suggestions

This study examined the extent to which having women CEOs affected bank risk as a benchmark for non-performing loans (NPLs) and capital adequacy ratio (CAR) in banking enterprises listed on the Indonesian Stock Exchange (IDX) from 2017-2021. The findings reveal that women CEOs and total women management board members do not significantly affect bank risk. Women's caution in overseeing and making judgments does not significantly impact their conduct as leaders, particularly in banks.

In terms of neighboring countries, Singapore, which already has an official code of governance confirmed by the Monetary Authority Singapore regarding gender diversity in corporate senior management, has a 12.2% representation of women on the management boards of all companies listed on the Singapore Exchange. Singapore has a significant number of female top management personnel, and Singapore's Code of Corporate Governance is driving this shift. Meanwhile, this governance rule states that board members must evaluate a

firm's needs according to various skills, experience, gender, and corporate knowledge (Human Capital Leadership Institute, 2017). Indonesia does not yet have an official governance code to encourage gender diversity in all firms listed on the IDX.

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