



Demographic Characteristics, Board Of Directors And Bank Characteristics On Risk

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Citation: Sanju Kumar Singh, et.al (2024) Demographic Characteristics, Board Of Directors And Bank Characteristics On Risk, *Educational Administration: Theory And Practice*, 30(8), 566-574

Doi: 10.53555/kuey.v30i8.7619

ARTICLE INFO

ABSTRACT

This study aims to determine how the demographic characteristics of the board of directors and bank characteristics affect bank risk in Indonesia. The sample used included banking companies from 2010 and 2015, which were selected using a purposive sampling method. The study employed a multiple regression analysis method. Variables; Age, Female board members, Education level, the citizenship of board members, CAR, firm size, NPL, and LDR on the dependent variable, bank risk. The results showed that age, the presence of female board members, the education level of the board, and firm size had a significant negative impact, NPL had a significant positive impact, and CAR, LDR, and the citizenship of board members had no significant impact on bank risk. This suggests that the demographic characteristics of the board of directors can influence decision-making and affect the risks borne by the bank.

Keywords: demographic characteristics, CAR, firm size, LDR, NPL, risk

1. Introduction

The banking industry is essential for the economy of a country, and Indonesia is not an exception. Banks collect deposits from the public and distribute them to improve the standard of living of people (Nasih, 2014). To improve the welfare of people, banks must be managed properly to carry out their business activities optimally. In Indonesia, the management of limited liability companies, including banks, follows a two-body system or a two-tier system. This system consists of a board of commissioners (supervisory board) and a board of directors (executive board) with clear authority and responsibility in accordance with their respective functions. Different powers, responsibilities, and interests can lead to different levels of risk-taking (Lepetit, L., Nys, E., Rous, P., & Tarazi, 2008).

The outcomes of bank risk management can be gauged from the overall risk. Overall risk is the risk that emerges as a result of internal and external factors affecting the company. This risk reflects the market's opinion of the general risk faced by the bank. The total risk borne by banking companies in Indonesia falls within the range of 1%-10%. During the period of 2010-2015, the average total risk of Indonesian banks tended to fluctuate. The role of the board of directors in risk management has an impact on the total risk of a bank. As per the Circular Letter of Bank Indonesia Number 13/23/DPNP dated October 25, 2011, the board of directors is accountable for the effectiveness of risk management implementation in the bank. Consequently, the board of directors (executive board) acts as a decision-maker for risk management policies.

The makeup of the board of directors, including factors such as age, gender, education, and nationality, can impact a bank's risk management. This is because the quality and capabilities of the board of directors can influence decision-making processes. Companies need to take into account these demographic characteristics when assembling their board. For instance, the presence of younger members can lead to more innovative use of technology, faster decision-making, and a greater willingness to take risks. According to data from the Infobank Research Bureau, there are 242 high-ranking female officials in financial companies and 16.62% of bank board members in Indonesia are women. During the 2010-2015 period, the majority of board members

in the banking industry in Indonesia had a master's degree. Specifically, 50% had a master's degree, 45% had a bachelor's degree, and 5% had a doctorate. The increasing internationalization of business in Indonesia has resulted in a growing need for foreign board members, as they possess knowledge of foreign markets. This is evidenced by the annual increase in the number of foreign board members in Indonesia (SINGH et al., 2021). Please note that the given text has been rephrased to improve language quality and clarity, while maintaining the original meaning and excluding any modifications to citations, references, or in-line citations.

According to research conducted by Adam and Funk (2011), Berger et al. (2014), and Padgett (2014), certain demographic characteristics of the board of directors, as well as bank characteristics, have been found to have a significant impact on bank risk. Specifically, these studies have shown that the average age of the board of directors has a negative effect on risk, the presence of women on the board of directors has a positive effect on risk, the education level of the board of directors has a negative effect on risk, and the presence of foreign board members can reduce risk. On the other hand, the results of studies by Chan et al. (2014), Truong and Wu (2014) suggest that the proportion of female board members has a negative effect on risk, the average age of the executive team has a positive effect on risk, and the presence of foreign boards of directors has a positive effect on bank risk. Therefore, the problem being studied is whether the demographic characteristics of the board of directors and bank characteristics (CAR, company size, LDR, NPL) affect bank risk.

2. THEORY BASIS AND HYPOTHESES DEVELOPMENT

1.1. Definition and Functions of Bank

Banks are financial intermediaries that distribute funds between parties with surplus funds and parties with deficit funds at a designated time. Banks serve as agents of trust, with trust being the fundamental basis of banking activities, including raising and distributing funds (Rahman et al., 2022). As agents of development, banks play a crucial role in mobilizing funds for economic growth. Their activities of collecting and distributing funds are essential for the smooth operation of economic activities in the real sector. Additionally, banks offer a range of services to the public, including money transfer services, safekeeping of valuables, provision of bank guarantees, and bill settlement (Wardhana, 2021).

1.2. Risk and its Measurement

Risk is typically described as the probability that outcomes will differ from anticipated results (Hanafi, 2012:1). It arises from the uncertainty faced by a company. The magnitude of risk can be assessed using various methods, such as range, variance, coefficient of variation, and standard deviation. This study employs total risk as a measure of risk, as it reflects the market's perception of the overall risk borne by the bank (Chan et al., 2016). The standard deviation of daily stock earnings, calculated using the following formula, is used to measure the size of risk:

$$\sigma_{R_{it}} = \sqrt{\frac{1}{n-1} \sum_{i=1}^n (R_{it} - \bar{R}_{it})^2} \dots\dots\dots (1)$$

Information :

$\sigma_{R_{it}}$: Standard deviation of bank i stock earnings in year t

R_{it} : Actual earnings of bank shares i day t

\bar{R}_{it} : Average daily earnings of bank i shares in year t

n: Number of active trading days on the exchange in 1 year

Earnings of bank shares i day t (R_{it}) for each fiscal year is obtained through the difference between the stock price on day t and the stock price on day t-1 divided by the stock price on day t-1:

$$R_{it} = \frac{P_{it} - P_{it-1}}{P_{it-1}} \dots\dots\dots (2)$$

Information:

P_{it} : closing share price company I on day t

P_{it-1} : closing share price on day t-1

Total risk reflects the variability of the bank's stock earnings (Pathan, 2009). The greater the standard deviation of daily stock earnings, the greater the risk (Hanafi, 2012:264).

2.3. Demographic characteristics of the board of directors and their effect on bank risk

In this study, the demographic characteristics of the board of directors were proxied by variables of age, gender, education level, and nationality of the board of directors.

1. Board of directors age

The age of the board of directors is the average age of the entire board of directors in each bank, in the year of the study, as measured by the following equation.

$$AGE = \frac{\sum \text{usia dewan direksi}}{\text{jumlah dewan direksi}} \dots \dots \dots (3)$$

The older the average age of a bank's board of directors, the lower the level of risk associated with the institution. This is because individuals tend to become more risk-averse as they age, possessing greater intelligence, experience, and information that enables them to make better risk assessments and more conservative decisions. In contrast, younger boards of directors may be more likely to pursue riskier strategies, motivated by the incentive to increase company returns. Studies by Berger et al. (2001) have shown that the younger the board of directors, the greater the likelihood of taking on riskier strategies.

H1: The average age of the board of directors has a negative effect on bank risk.

2. Gender of the Board of Directors

The goal of incorporating women on the board of directors, or "gendering the board of directors," is to increase the presence of women in this capacity. This is determined by a dummy variable, where 1 indicates the presence of women on the board and 0 indicates the absence of women. Research has shown that differences in traits and characteristics between men and women can impact a person's risk preferences. The presence of women on the board, known for their careful analysis and diligent supervision, can lead to more informed decisions and lower company risk. Women tend to thoroughly examine problems before making decisions and monitor the execution of those decisions, resulting in more appropriate solutions and lower bank risk. Zigraiova's research (2016) found that women's meticulous nature, which involves detailed information and alternative decision analysis, can negatively affect risk-taking. However, other studies like Adam and Funk (2011) have suggested that female board directors prioritize self-transcendence, which includes benevolence and universalism. These values lead to decisions that prioritize the well-being of all people and the environment, potentially making companies with many female directors more shareholder-focused and risk-tolerant.

H2: The existence of a female board of directors has an effect on bank risk.

Board Director's education level

The board of directors' education level is measured using an ordinal scale ranging from 1 to 5, with 1 indicating the lowest level of education and 5 signifying the highest. High school education is scored 1, diploma 3 is scored 2, S1/D4 is scored 3, S2 is scored 4, and S3 is scored 5. The mode of all directors in each company is used to determine their education level. A higher level of education among the board of directors leads to more precise decision-making, resulting in lower bank risk (Barkah et al., 2022). Research by Berger et al. (2014) indicates that education level negatively affects risk-taking behavior, as a higher level of education leads to more rational thinking and is used as a reference in decision-making, resulting in lower company risk. Education level also influences a person's risk tolerance. According to Grabel (2000), a higher level of education increases risk tolerance and confidence, making the board of directors more likely to take risky decisions to achieve higher results.

H3: The education level of the board of directors has an effect on bank risk.

4. Citizenship of the board of directors

The aim of the citizenship of the board of directors is to determine whether there is a foreign board of directors present or not. A dummy variable is used to measure this, where a value of 1 indicates the presence of a foreign board of directors and 0 indicates the absence of a foreign director on the board. The presence of a foreign board of directors is thought to bring a competitive advantage to the company, as it can expand its international network. They may also introduce more modern technology and managerial techniques that can reduce bank risk. However, the diversity of citizens and cultures within the board of directors can also lead to communication problems and conflicts between individuals, which can trigger agency problems and increase bank risk (Zigraiova, 2010).

H4: The citizenship of the board of directors has an effect on bank risk.

2.4. Characteristics of banks and their effect on bank risk

In addition to demographic characteristics, there are bank characteristics that also affect a bank's risk profile, including CAR, size of the board of directors, and size of the bank.

1. Capital adequacy ratio(CAR)

The ratio used to assess the ability and capital adequacy of the bank is the capital adequacy ratio which is measured by the following formula.

$$CAR = \frac{\text{Modal bank}}{\text{ATMR}} \times 100\% \dots \dots \dots (4)$$

This ratio is also an indicator that shows the ability of banks to cover the decline in the value of their assets as a result of bank losses caused by risky assets. The higher the bank's capital will affect the management's ability to manage the risk of the bank's operational activities which causes the bank's risk to be lower, which means the bank is able to face risks and changes in business conditions that occur. The results of Berger et al. (2014) shows the negative effect of CAR on risk taking.

H5: Capital adequacy ratio has a negative effect on bank risk.

2. Company size (size)

Company size is seen from the total assets owned by the company, which can be used for company operations. Size measurement uses the natural logarithm of total assets.

$$SIZE_{i,t} = \ln(\text{Total Asset}_{i,t}) \dots \dots \dots (5)$$

According to Taswan (2010), banks with larger total assets are considered more capable of managing risk because with large total assets, banks can expand operational activities, diversify so that bank risks are lower. The results of Berger et al. (2014) and Anderson (2012) show the negative effect of firm size on risk taking.

H6: Firm size has a negative effect on bank risk.

3. Loan to deposit ratio (LDR)

Loan to deposit ratio (LDR) is the level of liquidity that measures the amount of funds placed in the form of credit originating from third party funds (TPF) collected by banks. The LDR ratio is a comparison of the amount of credit given by the bank to the funds received by the bank (Dendawijaya, 2009: 116). The LDR ratio can be calculated by the following formula:

$$LDR = \frac{\text{total of loan given}}{\text{third party of funds}} \times 100\% \dots \dots \dots (6)$$

The upper limit of LDR is 110% while the lower limit of LDR is 80%. The higher the LDR, the riskier the bank's liquidity condition is because the more credits issued, the lower the liquidity capacity and will increase the risk borne by the bank. Therefore, LDR has a positive effect on bank risk (Gelos, 2006).

H7: *Loan to deposit ratio (LDR)* positive effect on bank risk.

4. Non-performing loans (NPL)

Non-performing loan's a ratio that shows the ability of bank management in managing non-performing loans provided by banks. NPL is calculated using the following formula:

$$NPL = \frac{\text{total of problematic loan}}{\text{total of given loan}} \times 100\% \dots \dots \dots (7)$$

Based on regulations issued by Bank Indonesia, a bank's NPL ratio should not exceed 5%. The higher the NPL, the worse the credit quality of the bank, so the greater the risk of the bank and the possibility of the bank being in troubled condition. Thus, the NPL ratio has a positive effect on bank risk.

H8: *Non-performing loans (NPL)* positive effect on bank risk.

2.5. Analysis model

Referring to the hypothesis in this study, the analysis model used is a multiple linear regression model.

$$\sigma_{i,t} = \alpha + 1AGE_{i,t} + 2GENDER_{i,t} + 3EDU_{i,t} + 4FOREIGN_{i,t} + 5CAR_{i,t} + 6SIZE_{i,t} + \beta_7LDR_{i,t} + 8NPL_{i,t} + \epsilon_{i,t} \dots \dots \dots (8)$$

Information:

$\sigma_{i,t}$ = Risk of bank i in year t

$AGE_{i,t}$ = Average age of the board of directors of bank i in year t

$GENDER_{i,t}$ = The presence of a female board of directors on the board of directors bank i in year t

$EDU_{i,t}$ = Education level of the board of directors of bank i in year t

$FOREIGN_{i,t}$ = Existence of foreign board of directors on the bank's board of directors i in year t

$CAR_{i,t}$ = *Capital adequacy ratio* bank i in year t

$SIZE_{i,t}$ = Size of bank i in year t

$LDR_{i,t}$ = *Loan to deposit ratio* bank i in year t

$NPL_{i,t}$ = *Non-performing loan* bank i in year t

α = Intercept

$\beta_1 - \beta_8$ = Regression coefficient

ϵ = *Error term*

3. RESEARCH METHODS

3.1. Data Types and Sources

The type of data used in this study is secondary data, obtained from the financial statements and annual reports of banks listed on the Indonesia Stock Exchange during the 2010-2015 period. In addition, data were also obtained from the websites of each bank, the website of Bank Indonesia (www.bi.go.id), the website of the Financial Services Authority (www.ojk.go.id), the website of the Indonesia Stock Exchange (www.idx.co.id), and Yahoo finance.

3.2. Sampling Procedure

The procedure for determining the sample was carried out by purposive sampling method, with certain criteria according to the purpose of this study. The criteria used are:

1. The Bank issues annual reports and financial reports ending on December 31 for the 2010-2015 period.
2. The Bank issues the demographic data of the board of directors contained in the annual report.
3. The bank has complete data as required in this study.
4. The sample banks are conventional banks, not Islamic banks.

3.3. Variable Operational Definition

1. Risk is the variability of actual stock earnings against expected stock earnings as measured by the standard deviation of daily stock earnings (σ) using equation (1)
2. The age of the board of directors is the average age of the members of the board of directors as measured by equation (3)
3. *Gender* of the board of directors indicates the presence or absence of a female board of directors in the board of directors. The existence of a female board of directors is measured by a dummy variable, namely: 1 if there is a female board of directors and 0 if there is no female board of directors in the bank.
4. The level of education is the mode of the highest education level ever taken by a member of the board of directors.
5. The citizenship of the board of directors indicates the presence or absence of a foreign board of directors in the board of directors. The existence of a foreign board of directors is measured by a dummy variable, namely: 1 if there is a foreign board of directors and 0 if there is no foreign board of directors in the bank.
6. *Capital adequacy ratio* (CAR) is a ratio that shows the bank's ability to meet financing from bank assets that contain risk with the capital owned by the bank, measured by equation (4)
7. *Size* is the size of a bank as proxied by the total value of assets owned, as measured by equation (5)
8. *Loan to deposit ratio* (LDR) is the ratio of the amount of credit extended by banks to third party funds, as measured by equation (6)
9. *Non-performing loans* (NPL) is a ratio that shows management's ability to manage non-performing loans provided by banks, as measured by equation (7).

4. RESULTS AND DISCUSSION

4.1. Description of Research Results

Table 1 Description of Research Variable Statistics

	N	Minimum	Maximum	Mean/Mode	Std. Deviation
TOTAL RISK	162	0.001	0.129	0.03160	0.020130
AGE	162	45.63	58.67	52.4739	2.87850
GENDER*	162	0	1	1	0.495
EDU**	162	3	5	4	0.514
FOREIGN*	162	0	1	0	0.486
CAR	162	0.080	0.414	0.17421	0.047686
SIZE	162	27,882	34,445	31.12550	1.758686
LDR	162	0.277	1.123	0.81534	0.124216
NPL	162	0.000	0.097	0.02102	0.016551
Valid N (listwise)	162				

Source: SPSS Statistics 22. output data

*Gender of the board of directors (*GENDER*) and nationality of the board of directors (*FOREIGN*) are nominal data

**Education level of the board of directors (*EDU*) is ordinal data

Based on Table 1, it is known that the average total risk of banks is 0.0316, the range of total bank risk tends to spread. This can be seen from the total risk value during the observation period ranging from 0.001 to 0.129. The average age of the board of directors is 52.47 years, suggesting that the majority of the board members are over 50 years old and have extensive experience. Meanwhile, the minimum age of the board of directors is 45.63 years, indicating the presence of some younger directors who hold positions on the board. The gender variable of the board of directors uses a nominal scale in the form of a dummy variable of 1 and 0. A value of 1 indicates the presence of female board members, while 0 indicates the absence of any female board members. The mode value of the gender variable in this study is 1, indicating that women are involved in the board of directors of banks in Indonesia. The education level variable of the board of directors was measured using an ordinal scale, with the minimum and maximum values in the study period being 3 and 5, respectively. The mode value of the education level variable is 4, indicating that most of the bank's board of directors have completed a master's degree. The citizenship variable of the board of directors uses a nominal scale in the form of a dummy variable of 1 and 0. A value of 1 indicates the presence of foreign board members, while 0 indicates the absence of any foreign board members. The mode value of the citizenship variable in this study is 0, indicating the presence of foreign board members in the sample bank of this study, which is still quite small. With regards to the characteristics of banks, the average Capital Adequacy Ratio (CAR) of the sampled banks from 2010 to 2015 was 0.1742 or 17.42%, with the lowest value being 0.080 or 8% and the highest value being 0.414 or 41.4%. This indicates that all the banks in the sample complied with Bank Indonesia's minimum capital requirement for commercial banks, which is 8% of risk-weighted assets. The size of the bank is calculated using the natural logarithm of the total assets owned by the bank, and the average size value in this study was 31.125, with a maximum value of 34.445, suggesting that the average total assets of publicly traded banks are large enough to diversify their operations. The average Loan-to-Deposit Ratio (LDR) value in this study was 0.8153 or 81.53%, with a minimum and maximum LDR value of 0.277 or 27.7% and 1.1231 or 112.31%. This indicates that some banks have not complied with Bank Indonesia's regulations, as a good LDR value is between 80% and 110%. Additionally, the average Non-Performing Loan (NPL) was 0.021 or 2.1%, with minimum and maximum NPL values of 0.000 or 0% and 0.097 or 9.7%. This suggests that there are still NPLs in Indonesian banks that are above Bank Indonesia's provisions, which require NPLs to be below 5%.

4.2. Model Analysis and Hypothesis Testing

The outcomes of the analysis and hypothesis testing for the multiple linear regression model during the research period are presented in table 2. The data processing and analysis were performed using the IBM SPSS Statistic 22 for Windows program. Table 4.2 reveals that the variables of age of the board of directors (AGE), gender of the board of directors (GENDER), education level of the board of directors (EDU), citizenship of the board of directors (FOREIGN), CAR, Size, and LDR have a negative impact on risk, while NPL has a positive impact on risk. The results of the t test demonstrated that the variables of age of the board of directors, gender of the board of directors, education level of the board of directors, size, and NPL had a significant impact on risk, while the variables of citizenship of the board of directors, CAR, LDR did not have a significant effect on risk (Iman et al., 2022).

The coefficient of determination (R^2) is 0.328, indicating that approximately 32.8% of the risk variability is accounted for by the variables of age of the board of directors (AGE), gender of the board of directors (GENDER), education level of the board of directors (EDU), citizenship of the board of directors (FOREIGN), CAR, Size, LDR, NPL. The remaining 67.2% of the risk variability is attributed to other variables that have not been considered.

Table 2 Results of Analysis of the Effect of Characteristics of the Board of Directors and Bank Characteristics on Bank Risk

Variable	Regression Coefficient (B)	Std. Error	Q. Count	Sig.
AGE	-0.002	0.036	-4.682	0.000*
GENDER	-0.007	0.000	-2,089	0.038*
EDU	-0.007	0.003	-2,426	0.016*
FOREIGN	-0.001	0.003	-0.389	0.698
CAR	-0.011	0.003	-0.358	0.721
SIZE	-0.002	0.030	-2,346	0.020*
LDR	-0.009	0.001	-0.797	0.427
NPL	0.182	0.012	2,229	0.027*
Constant		0.254		
R-Square		0.328		
Adjusted R-Square		0.292		
F Statistics		9,316		
Sig.		0.000		

*) significant at = 5%

4.3. The Effect of Demographic Characteristics of the Board of Directors on Bank Risk

1. Board Directors' Age

The age of the board of directors has a significant negative impact on bank risk, as older directors tend to exercise greater caution when making decisions. Furthermore, their wealth of experience and knowledge enables them to make more precise decisions, which in turn reduces the bank's risk level. The age of the board of directors also affects their spiritual, emotional, and intelligence. As directors age, their spiritual intelligence increases, as evidenced by their ability to learn valuable lessons from past failures, which are then used when making decisions. Stable emotional intelligence can also impact risk management. Older directors possess better emotional control, which can help to mitigate risk. The intelligence of the board of directors is linked to their brain intelligence and experience, with older directors having more experience and thus taking greater care when making decisions. This leads to lower risk levels resulting from their decisions, which is consistent with the findings of Berger et al. (2014) and Elsaid (2012).

2. Gender of Board of Directors

The impact of gender on this study was evaluated by determining the number of female members on the board of directors, which had a noteworthy negative effect. This suggests that having women on the board of directors leads to a smaller risk for the bank. Women are known for their attentive, cautious, collaborative, and patient nature, which allows them to make more informed decisions and reduce risk. The findings of this study align with the research of Almazan and Suarez (2003), Zigraviova (2016), and Gabel (2000).

3. Board of Director's Education Level

The influence of the education level of the board of directors on bank risk is noteworthy. Specifically, a higher level of education among board members leads to more cautious decision-making, which in turn decreases the risk associated with the bank. According to a study by Febriyanti et al. (2022), the more educated the board of directors is, the more rational their thinking and decision-making processes become. Furthermore, board members with higher levels of education tend to have a better understanding of risk management, which contributes to more informed decision-making that results in lower bank risk. Additionally, their capacity to evaluate projects using more complex and comprehensive techniques enhances the accuracy of risk assessments, ultimately reducing bank risk.

4. Nationality of the board of directors

The impact of a foreign board of directors on bank risk is negligible, as the number of such directors in publicly traded banking companies is relatively small, limiting their influence on decision-making. This finding aligns with prior studies, including those by Lehman and Dufrene (2008) and Zigraviova (2016).

4.4. The Influence of Bank Characteristics on Bank Risk

1. Capital Adequacy Ratio (CAR)

The impact of the capital adequacy ratio (CAR) on bank risk is negligible in Indonesia, as most banks already have CAR values exceeding the minimum requirement of 8% set by Bank Indonesia. Consequently, the study's findings indicate that CAR has no significant influence on bank risk. This conclusion aligns with the research of Agusman et al. (2008) and Yulimel (2013).

2. Company size (Size)

Company size has a considerable influence on bank risk. As the bank's assets increase, it indicates a greater ability to diversify its operational activities. By diversifying its operations, the bank can generate more stable income. This, in turn, can boost public confidence in banks with good reputations, which can help to reduce risk. It is worth noting that these findings align with previous research conducted by Berger et al. (2014) and Anderson (2000).

3. Loan to deposit ratio (LDR)

The findings indicated that the LDR ratio does not seem to have an impact on bank risk, as the majority of the banks in the sample of the study have adhered to the regulations set by Bank Indonesia, which require a minimum LDR of 80% and a maximum of 110%. Consequently, investors show less sensitivity towards the LDR value of a banking company. The outcomes of this research align with the studies conducted by Agusman et al. (2008) and Makaryanawati (2009).

4. Non-performing loans (NPL)

The NPL ratio serves as a measure of a bank's management's ability to handle non-performing loans provided by financial institutions. The NPL has a substantial positive impact on bank risk, as the higher the NPL, the lower the credit quality of the bank, thereby increasing the likelihood of financial difficulties. A rise in NPL signals a negative outcome, which is captured by investors, leading to a decrease in stock prices and an increase in bank risk. These findings align with Mawardi's research conducted in 2005.

5. CONCLUSIONS AND SUGGESTIONS

5.1. Conclusion

Drawing conclusions based on the results and discussion presented in the previous chapter, the following outcomes can be inferred:

1. The age of the board of directors has a significant negative effect on bank risk, because the older the average age of the board of directors is more risk averse and has better risk management.
2. The existence of a female board of directors has a significant negative effect on bank risk, because women are more thorough and careful in making decisions so as to minimize the risk borne by the bank.
3. The education level of the board of directors has a significant negative effect on bank risk, because the higher the education level of the board of directors, the higher the ability to analyze projects so that they can make the right decisions and minimize bank risk.
4. The citizenship of the board of directors has no significant effect on bank risk, because there are still few foreign boards of directors on the board of directors of banking companies that are sampled in the study so that foreign boards of directors are unable to contribute significantly to decision making.
5. *Capital adequacy ratio* does not have a significant effect on bank risk, because the majority of banks in Indonesia have met the minimum CAR requirements set by Bank Indonesia, which is 8%.
6. Firm size has a significant negative effect on bank risk, because the greater the total assets of the bank, the greater the bank's ability to diversify.
7. *LDR* does not have a significant effect on bank risk, because most banks in Indonesia have complied with Bank Indonesia regulations which stipulate a minimum LDR of 80% and a maximum of 110%.
8. *NPL* had significant positive effect on bank risk, because the greater the NPL, the worse the quality of bank credit which causes the number of non-performing loans to increase so that the possibility of the bank being in troubled conditions is greater and bank risk increases.
9. The R² value of 0.328 means that 32.8% of the risk variability can be explained by the variables in this study while the rest is explained by other variables outside this study.

5.2. Suggestion

Based on the research that has been done, the writer can give some suggestions as follows:

1. For the bank management, it is necessary to consider the demographic characteristics of the board of directors (age, gender, and education level of the board of directors) and the characteristics of the bank (company size and NPL).
2. Investors and/or potential investors need to consider the demographic characteristics of the board of directors (age, gender, and education level of the board of directors) and the characteristics of the bank (company size and NPL).
3. Further research is expected to add other variables outside of this study, because the value of R square in this study is still relatively low.

References

1. Adams, RB, & Ferreira, D. (2009). Women in the boardroom and their impact on governance and performance. *Journal of Financial Economics*, 94(2), 291-309. <http://dx.doi.org/10.1016/j.jfineco.2008.10.007> accessed 27 November 2016
2. Adams, Renée and Patricia Funk. 2011. Beyond the glass ceiling: Does gender matter?. *Management of Science*. 58, 219–235.
3. Agusman, A., Monroe, GS, Gasbarro, D., & Zumwalt, JK (2008). Accounting and capital market measures of risk: Evidence from Asian banks during (1998-2003). *Journal of Banking and Finance*, 480-488. <http://dx.doi.org/10.1016/j.jbankfin.2006.06.018>
4. Bank Indonesia. 2011. Bank Indonesia Regulation Number 13/1/PBI/2011 concerning Assessment of Commercial Bank Soundness Level. Jakarta.
5. Berger et al. 2014. Executive Board Composition and Bank Risk Taking. *Journal of Corporate Finance*
6. Bharath, ST, M. Narayanan, & H. Seyhun Nejat. 2009. Are women executives disadvantaged?" University of Michigan.
7. Chan et al. 2016. The Chinese bank's directors and their risk taking behavior. *Chinese Management Studies*, Vol.10 Iss 2 pp.291-311
8. Cheng et al. 2010. Management demography and corporate performance: Evidence from China. *International Business Review*
9. Elsaid, Eahab and Nancy D Usrel. 2012. Age, CEO Succession, and Risk Taking. *Accounting and Finance Research*. Vol. 1 No.2;2012.
10. Gelos, R Gaston. 2006. Banking Spreads in Latin America, IMF Working Paper.
11. Grable, John. E. 2000. Financial Risk Tolerance And Additional Factors That Affect Risk Taking in Everyday Money Matters. *Journal of Business and Psychology*. Vol. 14, No. 4, Summer 2000
12. Hambrick, DC, & Mason, PA (1984). Upper echelons: The organization as a reflection of its top managers. *Academy of Management Review*, 9(2), 193-206.

13. Hanafi, Mamduh. 2009. Risk Management. Yogyakarta: UPP STIM YKPN.
14. Herrmann, Poll and Deepak Datta. 2005. Relationships between Top Management Team Characteristics and International Diversification: an Empirical Investigation. *British Journal of Management*
15. Makaryanawati, Ulum Misbachul. 2009. The Influence of Interest Rates and Company Liquidity Levels on Investment Risks in Stocks Listed on the Jakarta Islamic Index. Faculty of Economics, State University of Malang.
16. Mawardi, Vishnu. 2005. "Analysis of Factors Affecting Financial Performance of Commercial Banks in Indonesia (Case Study on Commercial Banks with Total Assets Less than 1 T)". *Journal of Business Strategy*, Vol 14, No. 1. h. 83-94.
17. Mõnks, FJ, et al. 2006. *Developmental Psychology: An Introduction to its Various Parts*. Yogyakarta: Gadjah Mada University Press.
18. Oxelheim, Lars and Trond Randy. 2003. The impact of foreign board membership on firm value. *Journal of Banking and Finance*.
19. Padgett, C. 2014. Variety is the Spice of Life – and Boardrooms (Online), (<https://www.henley.ac.uk/html/hwss/files/ICM-2014-11-Padgett.pdf>), accessed 27 May 2016
20. Pathan, Shams. 2009. Strong boards, CEO power and risk-taking banks. *Journal of Banking & Finance*
21. Pertiwi, Made Putri G. 2016. Demographic Factors of the Board of Directors, Internal Factors and Bank Risk Profile. Thesis is not published. Surabaya Faculty of Economics and Business Universitas Airlangga.
22. Robbins, SP and Judge. 2008. *Organizational Behavior Book 2*. Jakarta: Salemba Empat.
23. Sari, Yulimel. 2013. The Effect of Profitability, Capital Adequacy and Liquidity on Stock Prices (Banking Companies Listed on the IDX). *Journal of Accounting* Vol 1, No.1
24. Sudana, I Made. 2011. *Corporate Financial Management Theory & Practice*. Jakarta: Erlangga.
25. Taswan. 2010. *Banking Management Concepts, Techniques and Applications*. Yogyakarta: UPP STIM YKPN.
26. Truong, Cindy and Yan Wendy Wu. 2014. Female Bank Executives: Impact on Performance and Risk Taking. *Economic Research Paper*
27. Yamin, Sofyan and Heri Kurniawan. 2009. *SPSS Complete: Complete Statistical Analysis Technique with SPSS Software*. Jakarta: Salemba Infotek
28. Zigraiova, Diana. 2016. Management Board Composition of Banking Institutions and Bank Risk-Taking: The Case of the Czech Republic. *IES Working Papers*
29. www.finance.yahoo.com