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Analysis of the Effect of Bank Capital, Market Discipline and Charter Value on Bank Risk Go Public in Indonesia

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Abstract

This study aims to determine the Analysis of the Effect of Bank Capital, Market Discipline and Charter Value on the Risk of Go Public Banks in Indonesia. With an indication of the measurement of bank risk is total risk, systematic risk and idiosyncratic risk. The indication of bank capital measurement is car. And indications of market discipline and charter value. This research is a type of quantitative descriptive research. The regression used in this study is panel data regression. The data used is secondary data with a population of 47 commercial banks listed on the Indonesia Stock Exchange. The objects selected were 37 banks that consistently published annual financial reports during the 2018-2022 period. The results showed that car has a positive and insignificant effect on total risk, systematic risk and idiosyncratic risk. Market discipline has a positive and insignificant effect on total risk and idiosyncratic risk. However, market discipline has a negative and insignificant effect on systematic risk. Charter value has a positive and insignificant effect on total risk and idiosyncratic risk. However, charter value has a negative and insignificant effect on systematic risk.

Keywords: Car; Market Discipline; Charter Value; Bank Risk

1. Introduction

Banking is an industry in which every operational activity can be exposed to risk and at any time can be faced with bankruptcy. For example, the recent bankruptcy of a bank in [1] was caused by three things, namely an increase in interest rates, the bank has inadequate capital compared to other banks so that it does not have sufficient reserves to bear losses such as interest increases and finally massive withdrawals by depositors who are concentrated because they know the bank's performance has decreased which causes a bank run. One of the causes of bank collapse is its capital and bank capital is one of the bank's discipline tools against risk. Banks that have high capital buffers have low risk at a certain time span, but additional capital buffers can encourage banks to take high risks [2]. In addition to bank capital as a means of bank discipline against risk, regulators set market discipline as the third pillar of Basel II. The existence of deposit insurance affects banks in taking risks, where banks are less careful in taking risks. Banks will take greater risks that lead to moral hazard problems and market discipline will decrease because depositors feel their deposits will be safe because of deposit insurance [3]. The charter value of the bank is also important in determining the bank's risk taking. However, charter value and bank risk have a two-way relationship where when banks have a high charter value, banks tend to have more incentives to take higher risks [4].

In Indonesia the banking industry has a significant market share in the financial system. And banking in Indonesia is experiencing many changes and banking in Indonesia is faced with various risks. For example in 2008 the Century Bank case. Then in 2020, Bank Bukopin faced a liquidity crisis due to a high NPL ratio of 10.66%, well above the 5% threshold set by OJK and insufficient capital to cope with credit risk. In 2018 and 2019 Bank mandiri's data showed an increase in CAR from 20.96% to 21.39% reflecting improvements in the bank's capital that could help address risk challenges. However, systematic risk also increased from 99.94% to 100%. On the other hand, market discipline, which acts as an indicator of the market's ability to monitor and control risk, declined from 13.17% to 12.20%. This decline may reflect the reduced effectiveness of the market in providing

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risk signals to financial institutions, or changes in market dynamics that affect risk assessment. And also the charter value showed an increase of 11.35% to 11.16%. Then in 2019 and 2020 BCA Bank data shows an increase in CAR from 24.6% to 26.9% in line with the increase in idiosyncratic risk from 0.78% to 1.39%. Where the value of market discipline shows an increase from 34.5% to 35%. But the franchise value shows a decrease from 17.07% to 16.04%.

2. Literature Review

Company management decisions can affect a company's risk taking and financial stability. According to [5] when there is asymmetric information, managers' investment and funding decisions tend to avoid risky securities to maintain stock prices. Adequate capital helps companies avoid risk and maintain dividend flows. Market discipline pressures companies to be more transparent, while high charter values encourage companies to reduce systemic risk and increase transparency, especially in countries with limited access to credit information. Since the 2008 global financial crisis BCBS announced Basel III, a global reform to strengthen capital requirements to control the crisis. In the study of [6] there is a U-shaped relationship between capital and risk taking, well-capitalized banks and undercapitalized banks will take more risk. Severely undercapitalized banks tend to take maximum risk and exhibit serious moral hazard problems among banks approaching bankruptcy. As bank capital increases banks will take on more portfolio risk.

The BCBS issued Basel II which is based on three pillars and the third pillar is market discipline which requires more detailed reporting of risk exposures to risk profiles. Market discipline is the mechanism by which market participants monitor and discipline excessive risk-taking behavior by banks [7]. Usually by withdrawing their deposits and by demanding higher interest rates and deposit insurance does not necessarily reduce market discipline [8]. According to [9] franchise value or charter value is the capitalized value of the bank's future economic benefits. The bank's charter value becomes valuable because the charter value is created due to anti-competitive restrictions imposed on the banking sector where in this case the government reduces the level of competition in the banking industry. The existence of charter value makes banks cautious in taking excessive risks that will potentially lose privileges. However, the existence of deposit insurance can create incentives for risk-taking.

3. Methods

The type of data used The type of data used is secondary data, namely data or information obtained from other parties, in the form of data that supports this research. The secondary data used is a combination of time series from 2018-2022 and latitude series from 2009-2016 and cross section of 37 data representing banks going public in Indonesia. This study uses three dependent variables and three independent variables. The dependent variables in this study are Total Risk (TR), Idiosyncratic Risk (Idio) and Systematic Risk (Sys), while the independent variables in this study are Bank Capital (BC), Market Discipline (MKTD), and Charter Value (CV) and the control variables in this study are SIZE and Income Verification Index (RevDiv).

The panel data equation model used in this study uses three models. The first regression model is to determine the effect of independent variables on Total Risk (TR) which is expressed in the regression model as follows:

$$\mathrm{TRi,} = \alpha + \beta 1\mathrm{BCi,t} + \beta 2\mathrm{MKTDi,t} + \beta 3\mathrm{CVi,t} + \beta 4\mathrm{Sizei,t} + \beta 6\mathrm{REV\_Divi,t} + \varepsilon \mathrm{i,t}$$

The second regression model is to determine the effect of independent variables on Systematic Risk (Sys) which is expressed in the regression model as follows:

$$\mathrm{Sysi,} = \alpha + \beta 1\mathrm{BCi,t} + \beta 2\mathrm{MKTDi,t} + \beta 3\mathrm{CVi,t} + \beta 4\mathrm{Sizei,t} + \beta 6\mathrm{REV\_Divi,t} + \varepsilon \mathrm{i,t}$$

The third regression model is to determine the effect of independent variables on Idiosyncratic Risk (Idio) which is expressed in the regression model as follows:

$$\mathrm{Idioi,} = \alpha + \beta 1\mathrm{BCi,t} + \beta 2\mathrm{MKTDi,t} + \beta 3\mathrm{CVi,t} + \beta 4\mathrm{Sizei,t} + \beta 6\mathrm{REV\_Divi,t} + \varepsilon \mathrm{i,t}$$

4. Results

To determine which regression model to choose between FEM, CEM and REM in this study, the Chow Test, Hausman Test and LM Test are required in the table as follows:

Based on table 1, the appropriate panel data regression model to use in this study is the CEM. The regression results using the Common Effect Model are as follows:

$$\mathrm{TRi,} = 1.088796 + 0.026640\mathrm{BCi,t} + 0.011560\mathrm{MKTDi,t} + 0.000143\mathrm{CVi,t} + \text{-}0.003664\mathrm{Sizei,t} + \text{-}0.002585\mathrm{REV\_Divi,t} + \mathrm{e}$$

Table 1. Model Accuracy Test Results

Model Accuracy Test	Prob.	P-value (5%)	The right model
Chow Test	0.1046	P-value > 0.05	CEM
Hasuman Test	0.8174	P-value > 0.05	REM
LM Test	0.6943	P-value > 0.05	CEM

Source: Researcher Processed Data

Table 2. CEM Regression Results Total Risk

Variable	Coefficient	t-statistic	Prob.
C	1.088796	20.73880	0.0000
CAR	0.026640	0.692347	0.4896
MKTD	0.011560	0.134466	0.8932
CHAR_VAL	0.000143	0.042372	0.9662
SIZE	-0.003664	-1.269632	0.2059
HHI	-0.002585	-0.053401	0.9575
R-*squared*	: -0.006456		
F-statistic	: 0.763950		
Prob(F-statistic)	: 0.576924		

Source: Researcher Processed Data

The interpretation of the panel data regression equation above can be seen that: The constant value is 1.088796 with a positive value. This shows that the amount of CAR, Market Discipline, Charter Value, SIZE and HHI is zero, then the level of Total Bank Risk is 1.088796. The CAR coefficient value is 0.026640 with a positive value. Thus, if the CAR value increases by 1 unit, it will encourage the total risk value to increase by 0.026640. The market discipline coefficient value is 0.011560 with a positive value. Thus, if the value of market discipline increases by 1 unit, it will encourage the total risk value to increase by 0.011560. The charter value coefficient is 0.000143 with a positive value. Thus, if the charter value increases by 1 unit, it will encourage the total risk value to increase by 0.000143. The SIZE coefficient value is -0.003664 with a negative value. Thus, if bank SIZE increases by 1 unit, it will encourage the total risk value to decrease by -0.003664. The HHI coefficient value is -0.002585 with a negative value. Thus, if HHI increases by 1 unit, it will encourage the total risk value to decrease by -0.002585.

CAR Variable, based on table 2, the probability value is 0.4896> 0.05, so H0 is accepted. This means that CAR has no influence on total bank risk. Market Discipline Variable, the probability value is 0.8932 > 0.05 then H0 is accepted. This means that market discipline has no influence on total bank risk. Charter Value Variable, the probability value is 0.9662 > 0.05 then H0 is accepted. This means that the franchise value has no influence on the total risk of the bank. SIZE Variable, the probability value is 0.2059 > 0.05 then H0 is accepted. This means that bank size has no influence on total bank risk. HHI Variable, the probability value is 0.9575 > 0.05 then H0 is accepted. This means that the income diversification index or HHI has no influence on the total risk of banks.

Based on table 2, the probability value is 0.576924 > 0.05, which means Ho is accepted and it can be concluded that the variables of bank capital, market discipline, charter value, size and income diversification index together have no effect on the total risk of banks. Based on the regression results with CEM, it is known that the R-square value is -0.006456. According to [10] if in the empirical test the adjusted R Square value is negative, then it is considered zero or the independent variable is not at all able to explain the variance of the dependent variable. This shows that the independent variables namely car, market discipline, charter value, size and HHI are not able to explain the dependent variable, namely total bank risk. To determine which regression model to choose between FEM, CEM and REM in this study, the Chow Test, Hausman Test and LM Test are required in the table as follows:

Table 3. Model Accuracy Test Results

Model Accuracy Test	Prob.	P-value (5%)	The right model
Chow Test	0.2643	P-value > 0.05	CEM
Hasuman Test	0.8920	P-value > 0.05	REM
LM Test	0.8642	P-value > 0.05	CEM

Source: Researcher processed data

Based on table 3, the appropriate panel data regression model to use in this study is the CEM, as follows:

Table 4. CEM Regression Results Systematic Risk

Variable	Coefficient	t-statistic	Prob.
C	1.010836	20.19495	0.0000
CAR	0.007549	0.205767	0.8372
MKTD	-0.006168	-0.075250	0.9401
CHAR_VAL	-0.000234	-0.218069	0.9420
SIZE	-0.000600	-0.218069	0.8276
HHI	-0.011627	-0.251945	0.8014
R-*squared*	: -0.026093		
F-statistic	: 0.064184		
Prob(F-statistic)	: 0.997182		

Source: Researcher Processed Data

Based on table 4, panel data regression equation as follows:

$$Sysi, = 1.010836 + 0.0007549BCi,t + -0.006168MKTDi,t + -0.000234CVi,t + -0.0006Sizei,t + \ -0.011627REV\_Divi,t + e$$

The interpretation of the panel data regression equation above can be seen that: The constant value is 1.010836 with a positive value. This shows that the amount of CAR, Market Discipline, Charter Value, SIZE and HHI is zero, then the level of systematic bank Risk is 1.010836. The CAR coefficient value is 0,0007549 with a positive value. Thus, if the CAR value increases by 1 unit, it will encourage the systematic risk value to increase by 0,0007549. The market discipline coefficient value is -0,006168 with a negative value. Thus, if the value of market discipline increases by 1 unit, it will encourage the systematic risk value to decrease by -0,006168. The charter value coefficient is -0,000234 with a negative value. Thus, if the charter value increases by 1 unit, it will encourage the systematic risk value to decrease by -0,000234. The SIZE coefficient value is -0,0006 with a negative value. Thus, if bank SIZE increases by 1 unit, it will encourage the systematic risk value to decrease by -0,0006. The HHI coefficient value is -0,011627 with a negative value. Thus, if HHI increases by 1 unit, it will encourage the systematic risk value to decrease by -0,011627.

Based on table 4, the probability value is 0,8372 > 0.05, so H0 is accepted. This means that CAR has no influence on systematic bank risk. The probability value is 0,9401 > 0.05 then H0 is accepted. This means that market discipline has no influence on systematic bank risk. The probability value is 0,9420 > 0.05 then H0 is accepted. This means that the franchise value has no influence on the systematic risk of the bank. The probability value is 0,8276 > 0.05 then H0 is accepted. This means that bank size has no influence on systematic bank risk. The probability value is 0,8014 > 0.05 then H0 is accepted. This means that the income diversification index or HHI has no influence on the systematic risk of banks.

Based on table 4, the probability value is 0,997182 > 0.05, which means Ho is accepted and it can be concluded that the variables of bank capital, market discipline, charter value, size and income diversification index together have no effect on the systematic risk of banks. Based on the regression results with CEM, it is known that the R-square value is -0,026093. According to [10] if in the empirical test the adjusted R Square value is negative, then it is considered zero or the independent variable is not at all able to explain the variance of the dependent variable. This shows that the independent variables namely car, market discipline, charter value, size and HHI are not able to explain the dependent variable, namely systematic bank risk. To determine which regression model to choose between FEM, CEM and REM in this study, the Chow Test, Hausman Test and LM Test are required in the table as follows:

Table 5. Model Accuracy Test Results

Model Accuracy Test	Prob.	P-value (5%)	The right model
Chow Test	0.0000	P-value < 0.05	FEM
Hasuman Test	0.2516	P-value > 0.05	REM
LM Test	0.0000	P-value > 0.05	REM

Source: Researcher Processed Data

Based on table 5, the appropriate panel data regression model to use in this study is the REM. The regression results using the Random Effect Model are as follows:

Table 6. REM Regression Results Idiosyncratic Risk

Variable	Coefficient	t-statistic	Prob.
C	0.085123	5.274143	0.0000
CAR	0.014565	1.774982	0.0776
MKTD	0.013300	0.607332	0.5444
CHAR_VAL	-0.000210	0.303007	0.7622
SIZE	-0.003618	-4.027149	0.001
HHI	0.023893	2.042789	0.0425
R-*squared*	: 0.103146		
F-statistic	: 5.232324		
Prob(F-statistic)	: 0.000165		

Source: Researcher Processed Data

Based on table 6, panel data regression equation as follows:

$$\text{Idioi,t} = 0{,}085123 + 0{,}014565\text{BCi,t} + 0{,}0133\text{MKTDi,t} + 0{,}00021\text{CVi,t} + \text{-}0{,}003618\text{Sizei,t} + 0{,}023893\text{REV\_Divi,t} + \text{e}$$

The interpretation of the panel data regression equation above can be seen that: Constant Value (α), the constant value is 0,085123 with a positive value. This shows that the amount of CAR, Market Discipline, Charter Value, SIZE and HHI is zero, then the level of idiosyncratic Bank Risk is 0,085123. CAR Variable, the CAR coefficient value is 0.014565 with a positive value. Thus, if the CAR value increases by 1 unit, it will encourage the idiosyncratic risk value to increase by 0.014565. Market Discipline Variable, the market discipline coefficient value is 0,0133 with a positive value. Thus, if the value of market discipline increases by 1 unit, it will encourage the idiosyncratic risk value to increase by 0,0133. Charter Value Variable, he charter value coefficient is 0,0002 with a positive value. Thus, if the charter value increases by 1 unit, it will encourage the idiosyncratic risk value to increase by 0,00021. SIZE Variable, the SIZE coefficient value is -0,003618 with a negative value. Thus, if bank SIZE increases by 1 unit, it will encourage the idiosyncratic risk value to decrease by -0,003618. HHI Variable, the HHI coefficient value is 0,023893 with a negative value. Thus, if HHI increases by 1 unit, it will encourage the idiosyncratic risk value to increase by 0,023893.

CAR Variable, based on table 6, the probability value is 0,0776 > 0.05, so H0 is accepted. This means that CAR has no influence on idiosyncratic bank risk. Market Discipline Variable, the probability value is 0,5444 > 0.05 then H0 is accepted. This means that market discipline has no influence on idiosyncratic bank risk. Charter Value Variable, the probability value is 0,7622 > 0.05 then H0 is accepted. This means that the franchise value has no influence on the idiosyncratic risk of the bank. SIZE Variable, he probability value is 0,0001 < 0.05 then Ha is accepted. This means that bank size has influence on idiosyncratic bank risk. HHI Variable, the probability value is 0,0425 < 0.05 then Ha is accepted. This means that the income diversification index or HHI has influence on the idiosyncratic risk of banks.

Based on table 6, the probability value is 0,000165 < 0.05, which means Ha is accepted and it can be concluded that the variables of bank capital, market discipline, charter value, size and income diversification index together have effect on the idiosyncratic risk of banks. Based on the regression results with CEM, it is known that the R-square value is 0,103146. This shows that the percentage effect of independent variables (CAR, market discipline, charter value, size, and HHI) on bank idiosyncratic risk is 10.32%, while the remaining 89.68% is influenced by other factors outside the regression model.

The results show that the variables of bank capital (CAR), market discipline, and charter value have a positive but insignificant effect on total bank risk, where an increase or decrease in these variables is in the same direction as total bank risk. The control variables, namely bank size and income diversification index measured by Herfindahl-Hirschman Index (HHI), each have a negative and insignificant effect on total bank risk. An increase in bank size and HHI tends to reduce total bank risk, although not significantly. The results show that the bank capital variable (CAR) has a positive but insignificant effect on bank systematic risk, while market discipline, franchise value, and control variables, namely size and income diversification index (HHI), have a negative but insignificant effect on bank systematic risk. An increase in market discipline, franchise value, bank size (size), and HHI tends to reduce bank systematic risk, although not significantly. The results show that the variables of bank capital (CAR), market discipline, and franchise value have a positive but insignificant effect on bank idiosyncratic risk. In contrast, the control variable, namely bank size, has a negative and significant effect, indicating that an increase in size reduces idiosyncratic risk and the income diversification index (HHI) has a positive and significant effect, where an increase in HHI causes an increase in bank idiosyncratic risk.

5. Conclusions

Bank capital, market discipline and charter value have a positive effect on total risk and are not significant in banks listed on the Indonesia Stock Exchange for the period 2018-2022. Bank capital has a positive effect on systematic risk and is not significant. Likewise, market discipline and charter value have a negative effect on systematic risk and are not significant in banks listed on the Indonesia Stock Exchange for the period 2018-2022. Bank capital, market discipline and charter value have a positive effect

on idiosyncratic risk and are not significant in banks listed on the Indonesia Stock Exchange for the period 2018-2022.

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