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ANALYSIS OF FACTORS INFLUENCING THE INTRINSIC VALUE OF REGIONAL DEVELOPMENT BANKS' EQUITY IN INDONESIA

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Abstract

The primary objective of establishing a company is to maximize the welfare of its shareholders and other stakeholders by increasing the company's value. Equity value represents the interest of ownership in a company and is crucial for investors in making well-informed investment decisions. This research aims to examine the impact of CAR, NPL, LDR, OEOI/BOPO, NIM, and Fim Size on the intrinsic value of equity in Regional Development Banks in Indonesia. The study population comprises 25 Regional Development Banks, and secondary data from the observation period of 2017 to 2021 are utilized. The research methodology employs panel data regression analysis, and the company valuation technique utilized is the Free Cash Flow to Equity (FCFE) approach. The findings indicate that CAR has a non-significant negative

influence on the intrinsic value of equity in Regional Development Banks, while NPL exhibits a significant negative impact. LDR shows a non-significant positive effect, and NIM has a non-significant negative effect on the intrinsic value of equity. Additionally, OEOI demonstrates a non-significant negative influence, while Firm Size has a significant positive impact on the intrinsic value of equity in Regional Development Banks.
Keywords: CAR, NPL, LDR, OEOI, NIM, Size, FCFE, Equity Value

INTRODUCTION

The banking sector plays a vital role in the economy, as outlined in the legislation of Law No. 10 of 1998, which amended Law No. 7 of 1992 on Banking. Banks serve as intermediaries by mobilizing and managing public deposits, which are then channeled to individuals and businesses in need through lending and financing activities. Furthermore, banks generate revenue through various financial services they offer.

Due to their involvement in handling public funds, the banking industry is inherently exposed to high risks. The inflow of funds from the public takes the form of different investment vehicles, such as loans, securities, and other investment instruments. Consequently, banks must prioritize stability and maintain sound performance to navigate changing economic conditions, regulatory frameworks, market competition, and industry trends. A strong and sustainable performance allows banks to fulfill prudential banking requirements effectively (Darmawi, 2011).

The primary objective of any company, including banks, is to maximize shareholder wealth and cater to the interests of other stakeholders by enhancing the overall value of the organization. Company value serves as a critical indicator of its financial health, growth potential, and attractiveness to potential investors. Therefore, investors rely on meticulous analysis to make informed investment decisions, and a higher company value tends to attract more investor interest (Brigham & Houston, 2010).

Financial and non-financial ratios are utilized as evaluation tools for assessing the financial performance of banks. Commonly employed ratios include ROA, ROE, CAR, NPL, KAP, LDR, OEOI/BOPO, NIM, Assets, Deposits, LCR, NSFR, Leverage Ratio, TKB, as well as non-financial factors such as IC, GCG, dividend policy, ownership structure, CSR policy, and external influences like inflation, interest rates, GDP, and others, which serve as benchmarks for measuring banking performance.

Company valuation plays a crucial role in various corporate actions, including joint ventures, share divestments, business mergers, acquisitions, dispute settlements, internal

evaluations, portfolio assessments, financial reporting, Leverage Buy Outs (LBOs), Management Buy Outs (MBOs), Initial Public Offerings (IPOs), and more.

According to KEPI and SPI (2018), the discounted cash flow method is employed in company valuation, involving the projection of future net cash flows. This valuation process encompasses a fundamental analysis of the company's financial performance and utilizes diverse valuation methodologies to determine the intrinsic value of the company.

Prior research has explored the impact of independent variables such as CAR, NPL, and LDR on the profitability of Regional Development Banks (Bank BPD). For instance, studies conducted by Subiyakta and Soelistyo (2021), Kossoh et al. (2017), Muslim (2019), and Kansil et al. (2017) have examined the influence of these variables on Regional Development Banks' profitability.

Furthermore, earlier studies have examined the relationship between financial performance variables and the value of Regional Development Banks'. For example, Ayu (2017) employed the Economic Value Added (EVA) model to calculate the value of Regional Development Banks and analyzed the influence of financial performance and dividend policy on company value.

Nevertheless, there remains a scarcity of research utilizing the Free Cash Flow method to assess the financial performance and value of Regional Development Banks. Additionally, studies pertaining to company valuation in non-listed companies are still limited..

Divergent findings are observed regarding the influence of the CAR variable on firm value. Hakim and Sugianto (2018) found a non-significant positive relationship between CAR and firm value, whereas Irianti and Saifi (2017) discovered a non-significant negative association between CAR and firm value.

The objective of this study is to analyze the potential impact of financial performance factors on the intrinsic value of equity in Regional Development Banks. Specifically, the focus is on factors such as Capital Adequacy Ratio (CAR), Non-Performing Loan (NPL), Loan to Deposit Ratio (LDR), Operating Expense to Operating Income Ratio (OEOI), Net Interest Margin (NIM), and Firm Size. The research adopts the Free Cash Flow to Equity (FCFE) method as the valuation approach to assess the intrinsic value of the company.

Hence, the research questions for this study are as follows:

1. Does CAR have a significant impact on the intrinsic value of equity in Regional Development Banks?
2. Does NPL have a significant influence on the intrinsic value of equity in Regional Development Banks?
3. Does LDR affect the intrinsic value of equity in Regional Development Banks?

4. Does OEOI or BOPO exert a significant influence on the intrinsic value of equity in Regional Development Banks?
5. Does NIM play a significant role in determining the intrinsic value of equity in Regional Development Banks?
6. Does Firm Size have a significant influence on the intrinsic value of equity in Regional Development Banks?

This research is expected to provide diverse benefits to various stakeholders. For the authors, it will enhance their understanding of the financial performance factors that affect the intrinsic value of equity in Regional Development Banks using the Free Cash Flow (FCF) method. For Regional Development Banks, this study will offer valuable insights to improve their firm value when seeking additional capital or considering consolidation. Investors will benefit from this research by making informed investment decisions, considering the significant factors that influence firm value. Lastly, for academia, this study will contribute to further research in the field of bank valuation, enriching the knowledge on relevant valuation methodologies.

LITERATURE REVIEW

Intrinsic Value of Equity

The intrinsic value of a company serves as a reflection of its fundamental aspects, cash flow estimations, growth prospects, risk considerations, and other qualitative factors (Damodaran, 2002; KEPI and SPI, 2018). Meanwhile, equity ownership represents an indirect stake in a company's assets and liabilities, determined by deducting total debt from total assets. Gaining insights into equity components aids investors in comprehending how a company manages its capital and enables them to forecast potential investment returns (Pratt & Niculita, 2008; Bachtiar & Nurfadila, 2019).

Company valuation encompasses a process that entails determining the worth of a company or its ownership through specific approaches and methodologies. Within this domain, three primary categories of valuation methods exist: economic methods, relative or market-based methods, and asset-based methods. Notably, the Economic Value Added (EVA) and Discounted Cash Flow (DCF) models represent widely employed economic valuation techniques. DCF estimates a company's value based on discounted future cash flows with consideration of the associated cost of capital, while EVA measures value creation from investments by factoring in the cost of capital (Djaja, 2017; Dadi et al., 2006).

In the context of banking business valuation, Adams and Rudolf (2010) highlight four distinctive characteristics that influence valuation approaches. Firstly, the banking industry operates within a highly regulated environment. Secondly, banks engage in activities on both

sides of their balance sheets, seeking profitability through lending operations and capital appreciation. Thirdly, banks inherently carry default risks and actively pursue risk within their business models. Lastly, the profitability and value of banks significantly hinge upon interest rate risks.

The Discounted Cash Flow (DCF) model is a widely used valuation method that determines the intrinsic value of an asset based on its unique characteristics, taking into account factors such as cash flows, growth prospects, and associated risks. In essence, the DCF model calculates the present value of expected future cash flows to arrive at the value of a company. The valuation process using the DCF model involves several key steps, including analyzing historical performance, projecting future financial performance, determining the appropriate discount rate, calculating the terminal value, interpreting the results of the valuation, and conducting sensitivity analysis to assess the impact of various assumptions.

During the initial stage of the DCF model, historical performance is meticulously examined. This entails thoroughly studying the company's historical financial statements, typically over a period of two to three years, with the possibility of extending the analysis period if deemed necessary. Various financial metrics, such as NOPLAT, Free Cash Flow, ROIC, and CFI, are computed to assess the company's performance. Furthermore, important indicators of company value are identified and evaluated, alongside an analysis of historical growth and overall financial health. (Djaja, 2017).

The subsequent stage involves projecting future financial performance. This includes assessing historical performance trends and conducting a comprehensive industry analysis, constructing plausible scenarios for the company's business plan, and formulating detailed projections of financial statements. This encompasses forecasting income statements, balance sheets, cash flows, and other relevant supporting reports. (Djaja, 2017).

Determining the cost of capital is a crucial aspect of the DCF model, as it represents the expected return on investment for investors. The cost of capital encompasses two components: the Weighted Average Cost of Capital (WACC) and the Cost of Equity (COE). WACC is the expected return on investment when investing in a comparable investment opportunity with similar risk and investment characteristics. WACC considers both the cost of debt and the cost of equity. On the other hand, estimating the cost of equity poses challenges as it involves factoring in the risk premium paid by the company to equity providers, given the absence of contractual terms governing payment conditions as in debt financing. (Djaja, 2017; Young & O'Byrne, 2001).

To estimate the desired rate of return by investors, an analysis of market behavior can be conducted. The Capital Asset Pricing Model (CAPM) is a widely recognized framework that

establishes a relationship between the expected rate of return and relevant risks, utilizing the beta coefficient as a measure of systematic risk compared to the overall market. Beta quantifies the volatility of stock or portfolio returns in relation to market returns, with a beta of 1 indicating similar risk to the market, a beta greater than 1 indicating higher risk, and a beta less than 1 indicating lower risk. Additional considerations, such as estimating the Market Risk Premium (MRP), account for variations in economic conditions and political risks that can influence the risk premium. (Jones, 2009; Husnan, 2001; Damodaran, 2002).

The concept of growth plays a vital role in projecting future financials. It represents the annual change in total assets and serves as an indicator of a company's growth potential through asset expansion. Typically, explicit projections are provided for a limited period, often around five years. Beyond this explicit period, the terminal value is employed as an estimation of the company's value. The terminal value approximates the company's value at the conclusion of the explicit projection period, simplifying the valuation calculation for subsequent periods.

In the field of valuation, the computation of free cash flow plays a vital role. There are two primary categories of free cash flow commonly employed: Free Cash Flow to Firm (FCFF) and Free Cash Flow to Equity (FCFE). FCFF represents the cash amount available after considering expenses such as depreciation, taxes, working capital, and investments. This figure reflects the funds accessible to investors once the company has satisfied all its operational costs and made necessary investments in assets. However, it is important to note that FCFF does not encompass the cash flow attributed to equity holders since debt takes precedence over equity. On the other hand, FCFE measures the residual cash flow that remains after addressing the company's financial obligations. It is calculated by subtracting capital expenditures and changes in working capital from net income, while also incorporating additional funding or deducting debt repayments. By discounting FCFE using the cost of equity and incorporating the terminal value, the company can ascertain its equity value. The valuation of equity involves aggregating the present value of FCFE for each year, including the terminal value, while considering the cost of equity.

Capital Adequacy Ratio (CAR)

As described by Dendawijaya (2003), the Capital Adequacy Ratio (CAR) serves as an indicator of a bank's capacity to supply funds for potential loss risks. It measures the extent to which a bank's total assets containing risks (such as credit, investments, securities, and interbank liabilities) are financed by its own capital alongside external sources like public funds and loans. The Financial Services Authority Regulation (POJK) No. 11/PJOK.03/2016, issued on January 29, 2016, pertaining to the Minimum Capital Requirement for Commercial Banks,

aligns with Basel III standards. It mandates banks to maintain a minimum capital level ranging from 8% to 11% based on their risk profile. This regulatory framework ensures the fulfillment of Minimum Capital Adequacy standards in the banking sector.

Operating Expenses and Operating Income (OEOI)

The ratio of Operating Expenses to Operating Income (OEOI), or BOPO (as commonly referred to in Indonesia), is a metric utilized to evaluate the operational efficiency and effectiveness of a bank. It measures the proportion of operating expenses incurred during a specific period relative to the corresponding operating income generated within the same period. The Central Bank has established benchmark OEOI ratios for commercial banks categorized into different business groups, referred to as BOOK. For BOOK I banks, the maximum allowable OEOI ratio is set at 85%. BOOK II banks are expected to maintain OEOI ratios ranging between 78% and 80%. BOOK III banks operate within a OEOI ratio range of 70% to 75%, while BOOK IV banks have a target OEOI ratio between 60% and 65%.

Loan to Deposit Ratio (LDR)

The Loan to Deposit Ratio (LDR) represents the ratio between the total amount of loans granted by a bank and the total amount of third-party funds, specifically deposits. It serves as a measure of a bank's ability to effectively manage and finance its lending activities by utilizing the deposits received from customers. The LDR plays a crucial role in assessing the health and liquidity position of a bank, as it determines the extent to which the bank relies on loans to meet its funding needs. A higher LDR indicates a greater dependence on loans, while a lower LDR suggests a higher proportion of deposits being utilized for lending purposes. The regulatory framework, as outlined in PBI No. 17/11/PBI/2015, stipulates the minimum and maximum acceptable LDR levels set by Bank Indonesia to ensure the stability and soundness of the banking sector.

Net Interest Margin (NIM)

Net Interest Margin (NIM) serves as a measure to evaluate a bank's proficiency in effectively handling its productive assets to generate net profits. This ratio is of utmost importance for sound bank management, as it aids in mitigating potential risks that may lead to distressed banks. A higher NIM signifies an increased interest income derived from well-managed productive assets within the bank. NIM is closely linked to the bank's ability to efficiently manage its productive assets, resulting in net interest income. Net interest income is obtained by deducting interest expenses from interest income. A larger NIM ratio indicates a

higher interest income derived from effectively managed productive assets within the bank. Consequently, when a bank successfully manages its productive assets to generate net interest income, it implies that the bank's management has effectively implemented NIM (Ismail, 2009).

Non Performing Loan (NPL)

Credit quality is assessed based on various factors such as the prospects of the borrower's business, their performance track record, and their ability to repay the loan. It is generally classified into different categories, including "performing" (with no arrears), "special mention" (with arrears of 1-90 days), "substandard" (with arrears of 90-120 days), "doubtful" (with arrears of 120-180 days), and "loss" (with arrears exceeding 180 days). Non-Performing Loan (NPL) refers to loans that have arrears of more than 90 days and are further categorized as "substandard," "doubtful," or "loss." The lower the NPL value, the lower the credit risk faced by the bank. Therefore, it is crucial for banks to exercise caution when granting loans and carefully assess the repayment capacity of their customers in order to mitigate credit risk effectively.

Firm Size

The size of a company is reflected in its total assets, which represents the magnitude of funds being managed and the complexity of its operations (Susanto & Pradipta, 2019). Assessing the size of a company involves utilizing various metrics such as total assets, logarithmic scale, sales, and market capitalization. Larger enterprises generally carry lower levels of risk compared to smaller ones due to their improved market control and ability to navigate economic competition more effectively (Siahaan, 2013).

Drawing from the conceptual framework of this study, and building upon previous research findings, the research hypotheses are as follows:

H1: There is a positive and significant relationship between the Capital Adequacy Ratio (CAR) and the intrinsic value of Regional Development Banks' equity.

H2: There is a positive and significant relationship between the Operational Expenses to Operational Income Ratio (OEOI/BOPO) and the intrinsic value of Regional Development Banks' equity.

H3: There is a positive and significant relationship between the Loan Deposit Ratio (LDR) and the intrinsic value of Regional Development Banks' equity.

H4: There is a positive and significant relationship between the Non-Performing Loan (NPL) and the intrinsic value of Regional Development Banks' equity.

H5: There is a positive and significant relationship between the Net Interest Margin (NIM) and the intrinsic value of Regional Development Banks' equity.
H6: There is a positive and significant relationship between the Firm Size (Size) and the intrinsic value of Regional Development Banks' equity.

RESEARCH METHODOLOGY

This study adopts a quantitative research approach to examine the intrinsic equity value of regional development banks in Indonesia. It aims to explore the causal relationships between independent variables (CAR, NPL, LDR, OEOI, NIM, and Firm Size) and their impact on the dependent variable, namely the intrinsic value. Employing an associative research design, the study aims to establish cause-and-effect relationships.

In this study, the researchers utilized secondary data from various sources, including the official website of the Financial Services Authority (FSA) and the official websites of regional development banks. The dataset consisted of annual reports and supplementary data. The research is conducted over a two-month period, commencing in August 2022.

In Indonesia, there are a total of 27 regional development banks. However, due to limited accessibility and the potential for data contamination from one bank with unfavorable performance, the sample size is reduced to 25 regional development banks with reliable data sourced from their respective company websites. A meticulous collection of financial report data spanning five consecutive years (2017-2021) ensures a comprehensive analysis.

Furthermore, the data collection process involves an extensive search for scholarly literature from various sources such as books, e-books, journals, and online platforms. This approach allows for the inclusion of valuable secondary data in the research sample, supplemented by relevant information from the literature. As defined by Indrianto and Supomo (2016), secondary data refers to information collected and documented by other parties, which is subsequently employed by researchers indirectly. In this study, the primary data source comprises audited annual financial reports accessed through the websites of the selected Regional Development Banks that constitute the research sample.

Operational Definition of Variables

The Capital Adequacy Ratio (CAR), also referred to as the Minimum Capital Adequacy Requirement (MCAR), serves as a measure of a bank's capacity to allocate funds to mitigate

potential loss risks. Non-Performing Loan (NPL-Gross) represents the ratio of problematic loans, encompassing doubtful, nonperforming, and noncollectable loans, calculated on a gross basis. The Operating Expense to Operating Income (OEOI/BOPO) ratio gauges a bank's operational efficiency and its ability to carry out day-to-day activities effectively. The Loan to Deposit Ratio (LDR) assesses the proportion of loans extended to third parties, excluding interbank loans, in relation to third-party funds, encompassing current accounts, savings accounts, and deposits, while excluding interbank funds. Net Interest Margin (NIM) signifies a bank's competence in managing its productive assets to generate net interest income. Firm Size (Size) corresponds to the scale of a company, typically quantified by its total assets. Intrinsic Equity Value signifies the remaining free cash flow available to shareholders after fulfilling all financial obligations, including debt payments, subsequent to deducting funds allocated for capital expenditures and working capital requirements.

In this study, the Economic Valuation Method is employed, specifically utilizing the Discounted Cash Flow (DCF) model, to assess the intrinsic value of companies. The Free Cash Flow to Equity (FCFE) is utilized as the income measure in the Income approach. For companies in the financial services sector, the definition of capital focuses primarily on equity capital in line with regulatory guidelines (Damodaran, 2002). To ensure comprehensive analysis, the researchers follow the KEPI and SPI 2018 guidelines, which recommend obtaining financial statements for a minimum of three years, or since the company's inception if operational for a shorter period. Additionally, a ten-year projection period is used to assess future performance. The Cost of Capital (COC) approach, specifically the Capital Asset Pricing Model (CAPM), is employed to determine the cost of equity, which serves as the discount rate for FCFE. By adhering to these guidelines, the discounted cash flows accurately represent the cash flows available to common equity shareholders, while the discount rate reflects the expected return or cost of equity. The utilization of the CAPM model ensures that the valuation process is consistent with the unique characteristics of equity, maintaining coherence within the analytical framework.

Data Analysis Techniques

In this study, data analysis techniques were employed to process and examine data derived from research instruments. Eviews 10 software was utilized for data analysis, and descriptive statistical methods were applied to evaluate quantitative data and assess past performance. The research employed the Panel Data Regression model, which combines cross-sectional and time series data to analyze the behavior of individual entities across different time periods.

There are three primary estimation techniques in panel data regression: the Common Effect Model (CEM), Fixed Effect Model (FEM), and Random Effect Model (REM). The CEM combines time series and cross-sectional data without explicitly considering specific time or individual dimensions. The FEM captures differences between individuals through intercept variations, utilizing dummy variable techniques. The REM accommodates correlations across time and entities by incorporating specific error terms for each entity.

To select the best model for estimating panel data regression, several tests can be conducted. The Chow Test compares the CEM and FEM models, the Hausman Test compares the FEM and REM models, and the Lagrange Multiplier Test compares the CEM and REM models. These tests assist researchers in choosing the most suitable model for their panel data analysis.

Prior to conducting panel data regression analysis, it is important to test the classical assumptions to ensure unbiased results. Situmorang (2019) suggests several commonly used tests including the normality test, multicollinearity test, and heteroscedasticity test. The normality test examines whether the data distribution adheres to a normal distribution, while the multicollinearity test assesses correlations among the independent variables. The heteroscedasticity test investigates the uniformity of variance across groups. By conducting these tests, researchers can evaluate the validity of the classical assumptions and ensure unbiased regression analysis results.

The coefficient of determination (R-squared) measures how well the model explains the variation in the independent variables. The Model Fit test (F-test) assesses the suitability of the chosen model in interpreting the influence of the independent variables on the dependent variable. The T-test evaluates the individual impact of each independent variable on the dependent variable's variation. Researchers use these tests to evaluate the regression model's adequacy in explaining the relationship between the independent and dependent variables.

RESULTS

The research findings are derived from a secondary dataset comprising 25 sampled Regional Development Banks' companies that meet the specified criteria. The data observations span from 2017 to 2021 and encompass the variables of interest, namely CAR (X1), NPL (X2), LDR (X3), OEOI (X4), NIM (X5), Firm Size (X6), and the dependent variable, intrinsic equity value (Y). Descriptive statistics summarizing the research results for these independent variables and the dependent variable can be found in Table 1 below.

Table 1. Descriptive Statistics

	X1	X2	X3	X4	X5	X6	Y
Mean	22.65248	2.462320	87.45976	77.52680	6.574720	28368591	10092890
Median	22.01000	2.140000	87.62000	77.23000	6.570000	21371464	8722575.
Maximum	35.47000	14.72000	121.4200	94.35000	10.87000	1.58E+08	29760241
Minimum	15.19000	0.290000	51.38000	66.48000	0.270000	5865005.	3104893.
Std. Dev.	3.843776	1.781003	13.00101	5.848487	1.274013	28405780	5541998.
Skewness	0.772545	2.902122	0.173227	0.247660	-0.475230	2.420112	1.567402
Kurtosis	3.945047	19.50920	3.227324	2.508674	7.283316	9.115122	5.411137
Jarque-Bera	17.08551	1595.015	0.894306	2.535126	100.2613	316.7838	81.46133
Probability	0.000195	0.000000	0.639446	0.281517	0.000000	0.000000	0.000000
Sum	2831.560	307.7900	10932.47	9690.850	821.8400	3.55E+09	1.26E+09
Sum Sq. Dev.	1832.052	393.3246	20959.25	4241.395	201.2655	1.00E+17	3.81E+15
N	125	125	125	125	125	125	125

The CAR (Capital Adequacy Ratio) variable (X1) exhibits statistical characteristics such as mean, median, maximum, minimum, and standard deviation. Bank Sulutgo has the lowest CAR ratio but still meets the regulatory requirement. The NPL (Non-Performing Loan) variable (X2) shows mean and median values, with Bank Papua having the highest NPL and Bank Kalteng having the lowest. The LDR (Loan to Deposit Ratio) variable (X3) has mean and median values, with Bank Sulserbar having the highest LDR and Bank Jatim having the lowest. The OEOI (Operating Expenses to Operating Income) variable (X4) also has mean and median values, with Bank Papua having the highest OEOI and Bank Jambi having the lowest. The NIM (Net Interest Margin) variable (X5) shows mean and median values, with Bank Sumselbabel having the highest NIM and Bank NTT having the lowest. The Firm Size variable (X6) exhibits mean and median values, with Bank BJB having the largest company size and Bank Bengkulu having the smallest. The intrinsic equity value variable (Y) shows mean and median values, with Bank BJB having the highest intrinsic equity value and Bank Lampung having the lowest.

The process of selecting the appropriate model in panel data regression

During the process of selecting panel data regression models, various tests are performed to identify the most suitable model. The decision matrix table 3 below summarizes the outcomes of each test, aiding in the selection of the preferred model.

Table 2. Eviews Model Test Matrix

Test	Results	Decision
Chow Test	Prob > 0.05	CEM
	Prob < 0.05	FEM
Hausman Test	Prob > 0.05	REM
	Prob < 0.05	FEM
Lagrange Multiplier Test	Prob > 0.05	CEM
	Prob < 0.05	REM

Chow Test

Table 3. Chow Test Results

Redundant Fixed Effects Tests			
Equation: MODEL_FEM			
Test cross-section fixed effects			
Effects Test	Statistic	d.f.	Prob.
Cross-section F	10.724763	(24,94)	0.0000
Cross-section Chi-square	164.826774	24	0.0000

Upon comparing the CEM and FEM models using the Chow Test, it was found that the Probability Value of 0.00 is less than the significance level of 0.05. Consequently, based on the outcomes of the Chow Test, the preferred model is determined to be the Fixed Effect Model (FEM).

Hausman Test

Table 4. Hausman Test Results

Correlated Random Effects - Hausman Test			
Equation: MODEL_REM			
Test cross-section random effects			
Test Summary	Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
Cross-section random	22.816428	6	0.0009

Upon comparing the REM and FEM models using the Hausman Test, the obtained probability value of 0.0009 is less than the significance level of 0.05. Consequently, based on the results of the Hausman Test, the preferred model is determined to be the Fixed Effect Model

(FEM). Taking into account the Chow Test and Hausman Test, the optimal model is identified as the Fixed Effect Model (FEM). As a result, the Lagrange Multiplier Test is not pursued.

Classical Assumption Test

Table 5. Classical Assumption Test Matrix

Assumption Test	OLS (FEM & CEM)	GLS (REM)
Normality	No	Yes
Heteroscedasticity	Yes	No
Multicollinearity	Yes, if there are more than 1 independent variables	Yes, if there are more than 1 independent variables
Autocorrelation	No	No

In panel data regression, the Common Effect Model (CEM) and Fixed Effect Model (FEM) use Ordinary Least Square (OLS) estimation, while the Random Effect Model (REM) uses Generalized Least Square (GLS) estimation. The Normality Test is not required in the OLS approach, but it is necessary in the GLS approach. The Heteroscedasticity Test is needed in the OLS approach, while it is not mandatory in the GLS approach. The Multicollinearity Test is necessary when there are multiple independent variables. The Autocorrelation Test is not relevant for cross-sectional or panel data. Based on the model selection tests, the FEM model requires Heteroscedasticity and Multicollinearity Tests.

Table 6. Heteroscedasticity Test Results.

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.272124	0.205161	1.326390	0.1879
X1	-0.002513	0.002852	-0.881304	0.3804
X2	0.004451	0.005566	0.799604	0.4260
X3	8.47E-05	0.000875	0.096772	0.9231
X4	-0.002469	0.001870	-1.320458	0.1899
X5	0.003017	0.005916	0.509961	0.6113
X6	9.41E-10	1.10E-09	0.853906	0.3953

The analysis in Table 6 suggests that there is no heteroscedasticity present in the examined variables. The probability values (Prob) of the independent variables are all greater than 0.05, indicating the absence of significant heteroscedasticity.

Table 7. Multicollinearity Test Results.

	X1	X2	X3	X4	X5	X6
X1	1.000000	-0.224831	-0.126136	-0.358147	-0.152610	-0.284509
X2	-0.224831	1.000000	-0.255583	0.398754	0.053209	0.075476
X3	-0.126136	-0.255583	1.000000	-0.121316	0.060853	-0.229773
X4	-0.358147	0.398754	-0.121316	1.000000	-0.094301	0.165930
X5	-0.152610	0.053209	0.060853	-0.094301	1.000000	-0.232185
X6	-0.284509	0.075476	-0.229773	0.165930	-0.232185	1.000000

The multicollinearity test is utilized to determine if there is a significant correlation among the independent variables in a regression model. To assess the presence of multicollinearity, the correlation matrix is examined. If the correlation values between the variables are less than 0.85, it indicates the absence of multicollinearity. Conversely, if the correlation values exceed 0.85, it suggests a potential presence of multicollinearity. Based on the values presented in Table 7, it can be concluded that the correlation coefficients between the independent variables (CAR, NPL, LDR, OEOI, NIM, and Firm Size) are all below 0.85, indicating no significant multicollinearity among the independent variables in this analysis.

Panel Data Regression Analysis

Once the model selection and classical assumption tests have been conducted, the analysis proceeds to the estimation of the panel data regression using the chosen model, which in this case is the Fixed Effect Model (FEM). In the FEM, it is assumed that the variations among Regional Development Banks can be accounted for by the differences in their intercepts.

Table 8. Panel Data Regression, Fixed Effects Model

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	4433640.	5487260.	0.807988	0.4211
X1	-13366.91	76267.29	-0.175264	0.8612
X2	-502930.1	148876.8	-3.378162	0.0011
X3	41364.41	23411.58	1.766836	0.0805
X4	-24438.05	50008.84	-0.488675	0.6262
X5	-235222.9	158228.7	-1.486601	0.1405
X6	0.247592	0.029487	8.396692	0.0000

Effects Specification			
Cross-section fixed (dummy variables)			
R-squared	0.945628	Mean dependent var	10092890
Adjusted R-squared	0.928275	S.D. dependent var	5541998.
S.E. of regression	1484229.	Akaike info criterion	31.46967
Sum squared resid	2.07E+14	Schwarz criterion	32.17109
Log likelihood	-1935.854	Hannan-Quinn criter.	31.75462
F-statistic	54.49438	Durbin-Watson stat	1.693246
Prob(F-statistic)	0.000000		

The regression equation for panel data is as follows:

$Y = 4.433.640 – 13.367*X_1 – 502.930*X_2 + 41.364*X_3 – 24.438*X_4 – 235.222*X5 + 0.25*X_6$

Based on the regression equation, the interpretation is as follows: the constant term represents the estimated intrinsic value when all independent variables are at zero. The CAR variable has a negative coefficient, indicating that an increase in CAR is associated with a decrease in the intrinsic value. Similarly, the NPL variable has a negative coefficient, suggesting that an increase in NPL leads to a decrease in intrinsic value. Conversely, the LDR variable has a positive coefficient, implying that an increase in LDR is associated with an increase in intrinsic value.

The OEOI variable has a negative coefficient, indicating that an increase in OEOI results in a decrease in intrinsic value. Likewise, the NIM variable has a negative coefficient, suggesting that an increase in NIM leads to a decrease in intrinsic value. Finally, the firm size variable (measured by assets) has a positive coefficient, indicating that an increase in firm size is associated with an increase in intrinsic value.

Goodness of Fit Evaluation

The adequacy of the model is evaluated through several statistical tests, including the Simultaneous Significance Test (F-test), Coefficient of Determination Test (R-squared Test), and Partial Test (T-test).

Table 9. Cross Section Fixed

Cross-section fixed (dummy variables)			
R-squared	0.945628	Mean dependent var	10092890
Adjusted R-squared	0.928275	S.D. dependent var	5541998.
S.E. of regression	1484229.	Akaike info criterion	31.46967
Sum squared resid	2.07E+14	Schwarz criterion	32.17109
Log likelihood	-1935.854	Hannan-Quinn criter.	31.75462
F-statistic	54.49438	Durbin-Watson stat	1.693246
Prob(F-statistic)	0.000000		

The F-test was conducted to assess the combined influence of CAR, NPL, LDR, OEOI, NIM, and Firm size variables on the Intrinsic Value of Indonesian Regional Development Banks. According to Table 10, the p-value (F-Statistic) is 0.000, which is less than the predetermined significance level of 0.05. This indicates that these variables collectively exhibit a significant impact on the intrinsic value. Additionally, the Adjusted R-Square value of 0.945, or 94.5%, indicates that the independent variables (CAR, NPL, LDR, OEOI, NIM, and Firm size) account for approximately 94.5% of the observed variation in the dependent variable, which is the intrinsic value of Regional Development Banks. The remaining 5.5% of the variation is attributed to other factors not considered in this study.

Table 10. Partial Test

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	4433640.	5487260.	0.807988	0.4211
X1	-13366.91	76267.29	-0.175264	0.8612
X2	-502930.1	148876.8	-3.378162	0.0011
X3	41364.41	23411.58	1.766836	0.0805
X4	-24438.05	50008.84	-0.488675	0.6262
X5	-235222.9	158228.7	-1.486601	0.1405
X6	0.247592	0.029487	8.396692	0.0000

The partial effects of CAR, NPL, LDR, OEOI, NIM, and firm size on equity intrinsic value were examined. The results indicate that CAR has a non-significant negative impact (p = 0.8612), while NPL exhibits a significant negative influence (p = 0.0011). On the other hand, LDR shows a non-significant positive effect (p = 0.0805), and OEOI has a non-significant negative impact (p = 0.6262). Similarly, NIM demonstrates a non-significant negative relationship (p = 0.1405). However, firm size has a significant positive association with intrinsic

value ($p < 0.0000$). These findings suggest that while certain variables have significant effects on equity intrinsic value, others do not exhibit significant associations.

DISCUSSION

The impact of CAR on the intrinsic equity value

The research findings indicate that the Capital Adequacy Ratio (CAR) has a non-significant and negative impact on the intrinsic equity value. These results align with previous studies conducted by Irianti and Saifi (2017) using the Tobin's Q valuation method and Laila Azmi et al. (2018) using the Price Book Value (PBV) method. However, there are contrasting findings from other studies. For instance, Kansil et al. (2021) found a significant and positive relationship between CAR and firm value using the Tobin's Q method. Similarly, Brastama and Yadnya (2020) demonstrated a positive and significant impact of CAR on firm value using the stock market price method, while Sugianto et al. (2020) found a positive but non-significant relationship between CAR and firm value using the Tobin's Q method.

The lack of significance in the effect of CAR on intrinsic value may be attributed to the fact that the CAR composition in Regional Development Banks already surpasses the regulatory requirement of a minimum 8% CAR. The average CAR of Regional Development Banks stands at 22.65, with minimal variation among banks and over time. Consequently, CAR is not a major concern for customers or investors when engaging with Regional Development Banks.

The impact of NPL on the intrinsic equity value

The research findings demonstrate that the Non-Performing Loan (NPL) variable has a significant and negative impact on the intrinsic equity value. These results are consistent with the studies conducted by Hakim and Sugianto (2018) using the Tobin's Q valuation method, Rifqi Sitompul (2020) using the Price Book Value (PBV) valuation method, and Sugianto et al. (2020) using the Tobin's Q method. Conversely, there are studies that contradict these findings. For instance, Christian Harrison (2020) found that NPL has a non-significant and negative effect on firm value using the Tobin's Q method, and Amalia and Muhammad Saifi (2017), Perdana and Adriana (2018), Olalere et al. (2020), and Brastama and Yadnya (2020) found either a non-significant or a positive and significant relationship between NPL and firm value using different valuation methods.

Credits/loans represent the primary source of income for banks and must be managed with caution and adherence to principles. The risks associated with credit/loan failures can affect the bank's performance, indicating that a high NPL ratio signifies the bank's inability to

effectively manage its productive assets and generate profits. Consequently, banks need to allocate resources for provisions to mitigate potential credit/loan risks. Increasing NPL levels coincide with diminishing profitability as banks incur costs to meet regulatory requirements. Failure to promptly address high NPL risks may lead to liquidity and reputation risks. Liquidity risks emerge when banks face challenges in retrieving funds from loans disbursed to borrowers as per the agreed terms, potentially hindering their ability to meet short-term obligations to depositors and consequently exposing them to reputational risks.

The impact of LDR on the intrinsic equity value

The research findings reveal that the Loan to Deposit Ratio (LDR) variable has a positive yet non-significant effect on intrinsic equity value. This aligns with Anggari and Dana's (2020) study utilizing the Tobin's Q valuation method. Conversely, Laila Azmi et al. (2018) and Sugianto et al. (2020) found contradictory results, where LDR was found to have a significant negative impact on firm value using the PBV and Tobin's Q methods, respectively.

In the core operations of banks, they collect funds from the public in the form of deposits and disburse them as loans. The regulatory requirements dictate that the ratio of public funds to loans disbursed should typically fall within the range of 78% to 92%. The average LDR of Regional Development Banks in this study was 87%, which complies with the benchmark LDR ratio. A low LDR suggests suboptimal loan disbursement, hindering the bank's ability to generate income from lending. Conversely, a high LDR poses liquidity risks when significant fund withdrawals occur.

Regarding the influence of Operating Expense to Operating Income (OEOI) on intrinsic equity value, the research findings indicate a non-significant negative impact. This aligns with Hakim and Sugianto's (2018) and Kansil et al.'s (2021) studies, both utilizing the Tobin's Q valuation method. Conversely, Maryadi and Susilowati (2020) found a significant negative relationship between OEOI and firm value using the Tobin's Q method.

Inefficient business operations or an increase in OEOI can potentially lead to a decline in intrinsic value, although the impact is not statistically significant. It is crucial for banks to manage operational efficiency and aim for a OEOI ratio within the regulatory benchmarks. Excessive OEOI can affect profitability, while too low a OEOI can hinder business activities. Regulatory benchmarks for OEOI typically range from 60% to 85%, varying based on bank categories.

The impact of NIM on the intrinsic equity value

The research results demonstrate that the Net Interest Margin (NIM) variable has a non-significant negative effect on intrinsic equity value. This aligns with the findings of Kurniawan

and Fauziah (2021) who utilized the PBV valuation method. However, there are contrasting results from other studies. For instance, Olalere et al. (2020) found a significant positive relationship between NIM and firm value using the market capitalization valuation method, while Irianti and Saifi (2017) found a positive but non-significant impact of NIM on firm value using the Tobin's Q method.

NIM plays a crucial role in determining the profitability of banking institutions, but this study indicates that it does not significantly affect the intrinsic value in Regional Development Banks. It is important to note that the average NIM for Regional Development Banks in this study was 6.57, which is higher than the overall average for banks in Indonesia, estimated to be around 4.68.

The impact of Firm Size on the intrinsic equity value

The research findings provide evidence of a statistically significant positive relationship between the variable of firm size and intrinsic equity value. These results are consistent with the empirical investigation conducted by Mahanani and Kartika (2022), who adopted the PBV valuation method. However, it is important to note that there are conflicting findings within the literature. For instance, Wardhani (2019) uncovered a significant negative impact of firm size on firm value utilizing the Tobin's Q approach, while Susilawati (2019) revealed a non-significant negative association between firm size and firm value using the PBV method.

The increasing magnitude and expansion of Regional Development Banks' size over time signify an ongoing evolution of their business operations. Thus, the augmentation of firm size corresponds to the progression of intrinsic value in Regional Development Banks.

CONCLUSION AND SUGGESTIONS

The research findings reveal significant insights into the determinants of intrinsic equity value in Regional Development Banks. Firstly, the study highlights that the Capital Adequacy Ratio (CAR) does not exert a statistically significant impact on intrinsic equity value, despite displaying a negative tendency. Secondly, the findings underscore the significant negative relationship between Non-Performing Loans (NPL) and intrinsic equity value in Regional Development Banks. Higher NPL levels correspond to a decrease in intrinsic equity value. Thirdly, the study indicates that the Loan to Deposit Ratio (LDR) does not significantly affect intrinsic equity value. Although LDR exhibits a positive influence, the impact fails to reach statistical significance. Fourthly, the research demonstrates that Net Interest Margin (NIM) does not have a significant effect on intrinsic equity value. Despite its negative association, the relationship lacks statistical significance. Fifthly, the study reveals that operational efficiency, as

measured by the Operating Expense to Operating Income (OEOI) ratio, does not significantly impact intrinsic equity value. Despite the negative influence of OEOI, its effect does not attain statistical significance. Lastly, the research establishes the significant positive relationship between firm size (as measured by assets) and intrinsic equity value in Regional Development Banks. Larger companies tend to possess higher intrinsic equity values.

It is crucial for Regional Development Banks to prioritize the quality of credit and loans, as NPL significantly affects intrinsic value. Future researchers are encouraged to employ alternative valuation methods and consider additional benchmark variables, such as ROA, ROE, LCR, NSFR, Leverage Ratio, TKSB, KAP, and non-financial ratios, to further enrich the understanding of Regional Development Banks' performance.

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