

Bank Credit Performance Based on Credit Decisions, Business Growth, and Credit Risk: Banking Credit Financing Applications in Indonesia

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ARTICLE INFO	ABSTRACT
	The bank's ability to extend credit to various businesses will shape credit performance. Bank credit performance results from measuring and assessing lending activities to achieve goals. This research analyzes a bank's credit performance model based on credit decisions, aspects of business growth, and credit risk. This research methodology uses a quantitative approach. The research data uses time series data for 2015-2022. The number of observations/samples is 60. The data used is credit financing data for small and medium enterprises published on bi.go.id. Methods of data analysis using SEM- PLS. The research findings show that bank credit performance is influenced by credit decision aspects, business growth aspects, and credit risk seen from the fit model value of 0.36 (strong). Furthermore, it was also found that credit risk acts as a mediating variable. Based on this research's recommendations, future studies on credit risk patterns and market valuations are needed. The practical implication of this research is that proper debt management and correct access to information can lead to business growth and low risk, thus impacting the bank's performance.
	Keywords: banking credit performance; credit decision; business growth;

credit risk.

1. INTRODUCTION

Bank credit is currently a priority for financing small and medium enterprises in Indonesia. Banks offer Various types of credit, such as investment credit, working capital, consumption credit, and people's business loans. Bank credit financing is provided for various small and medium business activities. Various studies have been conducted in various countries, such as China, that bank credit is used to increase the value of SME's capital (Sheng, 2021). Even using bank credit in China can increase the growth value of SMEs. Business capital support does not only come from internal capital but also from external capital/loans. Business activities only utilize internal sources of capital but cannot provide maximum results compared to using two sources, namely internal and external capital. A study in Malaysia (Mamun, 2016) found that micro-entrepreneurs with adequate education, entrepreneurial spirit-competence, and loan/credit capital management greatly determine business performance. Furthermore (Rahman et al., 2016) stated that training and experience managing SME businesses with access to external capital sources will be able to develop and grow business performance. Increasing mindset abilities, creative human resources, and social capital will be able to develop businesses well (Obschonka et al., 2012). Business management competence and skills determine success in the SME business (Botha et al., 2015). Thus, business managers should have cognitive competence, be responsive to global changes, be able to compete in the market, and have capabilities (Latukha & Panibratov, 2015). The same statement by (Yergin et al., 2015) that socio-economic

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and political support and understanding of business regulations in accessing microfinance credit will create income, reduce poverty, and create good business performance.

Companies accessing financial credit to increase SME capital sources are often done through the banking sector. Research has proven (<u>Sheng, 2021</u>) that SME financing in China is carried out through bank credit, but this credit financing has a different strategy between banks. Banking credit for SMEs also has a high risk, so it is necessary to take precautions in deciding the distribution of these loans. Furthermore (<u>Chen et al., 2019</u>), in testing research in China that the increased use of bank credit for SMEs has a higher risk than trade credit.

Changes in the composition of equity values and the composition of debt financing decisions determine changes in SME's business value. Creditors' financing decisions are determined by many factors, such as the type of business, company size, business feasibility, value of opportunities and risks, and performance resulting from business growth. The decision to finance through bank credit in various businesses in several countries, such as Thailand and Malaysia, is focused on 50% of SMEs. Unlike the case with conditions in Indonesia. SME credit financing through banks such as BRI is only 20% for SME loans and 40% for corporate loans.

The low ability of the National Bank to extend credit to small and medium enterprises in Indonesia is an important issue that needs to be studied. At the same time, the national economy level of around 62% is still supported by the growth of Small and Medium Enterprises and its contribution through the entrepreneurship of 3.47% due to low capital support from banks. It is in contrast to China, Bangladesh, and Malaysia, where the use of bank credit is prioritized for SMEs (Sheng, 2021), (Yergin et al., 2015), (Abdullah et al., 2017) and (Mamun, 2016). On the other hand, several studies (Bhaskaran et al., 2023) show that bank credit distribution will be able to increase market valuations and bank credit performance. In addition, bank credit performance is also determined by changes in times of uncertainty and market value. The higher the time of uncertainty and market risk, the higher the priority selection of bank credit decisions. It is confirmed by (Chen et al., 2019) that companies in China prefer bank credit financing with high credit risk and reduced trade credit. Research conducted by (Bhaskaran et al., 2023) of 472 global banks for the 2015-2019 period showed that banks with high social and governance activities have a positive market valuation effect. Furthermore, research conducted by (Albaity et al., 2022) on 104 banks shows that the credit growth of Islamic banks is higher than conventional banks. However, these findings are clarified by (Acharya & Acharya, 2006), that credit financing impacts unsustainable micro-business growth so that credit institutions will face high risks. Findings by (Abdullah et al., 2017) show that interest-based micro-enterprise loans in Bangladesh with friend guarantees are less successful than credit based on rural development work program schemes.

SMEs have made it easier to access credit financing through investment and working capital loans and people's business loans (KUR). As stated (<u>Rawat, 2017</u>), working capital is used as a determinant of company efficiency and the level of business soundness and SME performance. Furthermore, findings by (Rawat, 2017) show that 83 SME clusters in India can contribute 45% of GDP. Market valuation of SMEs can be done through cost improvement, providing good facilities, promotional capabilities, and having a market brand. It differs from the conditions in Indonesia, where SME's contribution through entrepreneurship is 3.47%. Problems are often considered to be the source of cause of the low contribution of SMEs or entrepreneurs to national economic growth. In addition, the low contribution of SMEs to GDP is due to insufficient access to capital. Management of investment credit financing and working capital credit is still weak. However, on the other hand, access to capital and SME credit financing has been regulated by banking policies through people's business credit (KUR). The results of observations from industry practices in large internationalscale businesses in Bali in 2023 obtained data that charging fees between 32-40% will increase the rate of return by 68%. Different things also happen to companies engaged in technology and SMEs in Bali, where the cost is determined by the results of a market survey so that costs can be allocated with certainty. Thus, setting clear and targeted costs has the potential to obtain a return opportunity of 18%, exceeding the market value. Based on the analysis description, it is necessary to study research on banking credit in Indonesia for SMEs that impact business growth, credit risk, and banking performance. The reason for conducting this research study is because various studies on the use of bank credit financing and credit institution financing in various countries in Asia still show different results. These differences can be seen from research findings by previous experts and can be classified, namely: (1) Bank credit financing in several countries such as China, India, Bangladesh, and Malaysia is a priority scale, even though it has a high risk; (2) financing from credit institutions in Bangladesh can lead to discontinued business growth; (3) Bank credit financing has better results if credit financing is directed to businesses that have clear and directed programs/objectives; (4) credit financing for SME's businesses with the concept of interest and social security/friends is less successful; (5) credit financing can have an impact on business growth and performance if the management of credit financing is more focused and clear; (6) SME's and corporate credit financing decisions can be determined by information and risk knowledge, business growth, performance and the type of credit financing chosen and the business that has been run. Likewise, with the problem of lending in Indonesia, which prioritizes corporate credit rather than small and medium business credit, it is necessary to study research on banking credit decisions for small and medium enterprises, business growth, and credit risk. This research aims to build a model of bank credit performance based on credit decisions, business growth, and credit risk. Thus, a more in-depth research study is needed by (1) analyzing the construction of a bank's credit performance model based on aspects of Credit Decision, Business Growth, and Credit Risk. (2) analyze the relationship pattern between credit decisions on business growth and credit risk.

The following section reviews the literature on The Packing Order Theory, Agency Cost Theory, Merton's Model, Credit Performance, Credit Decision, Business Growth, and credit risk. Section 3 presents the research methodology, Section 4 reports the findings, and Section 5 concludes the study.

2. THEORETICAL REVIEW AND HYPOTHESIS DEVELOPMENT

2.1 The Packing Order Theory

Funding sequence theory was expressed by Donaldson (1961) and updated by Myers & Majluf (1984), proven by (<u>Wu & Wang, 2005</u>) and (<u>Smulowitz et al., 2019</u>). This theory explains that companies prioritize internal funding over equity. Asymmetric information will determine the company's choice between internal and external financing. Furthermore, asymmetric information will provide knowledge and understanding for managers about prospects, risks, and company value. According to (<u>Wu & Wang, 2005</u>), Myers' theory does not appear to affect asymmetric information for SMEs. Some views state that the Pecking Order Theory cannot show the exact composition of determining the company's capital structure. However (<u>Zeidan et al.,</u> <u>2018</u>) prove that the owners of private companies in Brazil are advanced and have followed the Pecking Order Theory model. The combined use of equity and money aims to improve the business's health.

2.2 Agency Cost Theory

This agency cost theory is expressed by <u>(Acemoglu & Jensen, 2023)</u>. Agency theory explains two kinds of relationships: between managers and shareholders (shareholders) and between managers and lenders (bondholders). Agency theory is a contractual form between 2 or more parties, where one acts as a principal and the other as an agent. The principal delegates responsibility for decision-making to agents. The powers and responsibilities of principals and agents are regulated in employment contracts and mutual agreements. This theory explains that the capital structure of loans/debt positively and significantly affects agency costs. Companies that use debt can prevent unnecessary company expenses and encourage managers to carry out operations more efficiently. The company's owner incurs agency costs to monitor and regulate the managers' actions to suit the company's interests. Indebted companies can carry out efficiency, thereby reducing agency costs. But not in line with research. The findings (<u>Irwansyah et al., 2020</u>) use of debt positively and significantly affects agency costs increase.

2.3 Merton's Model

Various studies have revealed that business financing through debt can create risks (<u>Chen et al., 2019</u>). The risk tendency that arises from bank credit financing is in the form of credit risk. The Merton Model in the study (<u>Zielinski, 2013</u>) is a structural analysis model of credit risk used by financial analysts/investors to understand a company's ability to repay loans/debt/default payments. The first model that causes the inability of companies to pay debts from a microeconomic perspective is the capital structure model. The Merton model treats bankruptcy as a continuing probability of default (<u>Murad, 2021</u>). However, in the short term, the demand for money for businesses increases, while in the long term, uncertainty arises, causing demand to decrease. The Merton model also explains the results and determination of the present value (PV) of debt, the term of the debt, and uncertainty. Uncertainty in the future may give rise to economic risks, business risks, and exchange rate risks. <u>Smulowitz et al., 2019</u> stated that diversification of business units in business organizations positively affects financial performance. The formulation of the Merton model is that the Default Point (DPT) is the sum of short-term debt and half of long-term debt. The Merton model has proven (Acharya & Acharya, 2006) that credit financing has a very high risk and business growth is not sustainable.

2.4 Credit Performance

Banking credit performance is a credit supply/distribution process that the bank's financial performance can influence. Factors such as capital adequacy, credit risk, and interest rates can influence lending. In addition, bank credit performance can be determined by the ability to repay, certainty of operating income, and normal economic conditions. Research conducted by (<u>Pille &Paradi, 2002</u>) stated that credit distribution that can form good performance can be carried out in efficient entity groups and inefficient institutional management. The level of efficiency of these entities in using credit is used to predict failure in lending. Similar research conducted by (<u>Kayode et al., 2015</u>) states that credit distribution impacts credit risk and banking performance in Nigeria. Credit risk is negatively and significantly related to banking performance. Furthermore, other research was conducted (<u>Olabamiji & Michael, 2018</u>) regarding the impact of managing credit risk in improving the financial performance. Different things are proven (<u>Prastiwi & Anik, 2020</u>) in research on credit diversification in efforts to maximize banking performance by reducing risk. Thus, it can be said that

credit risk is inversely proportional to banking performance. The higher the credit risk, the higher the debtor's credit failure, so the level of banking profitability decreases. It can affect the performance of bank credit.

2.5 Credit Decision

The results of industry practices in 2023 assume normal economic conditions. A phenomenon in credit financing for hotel and restaurant businesses/businesses when charging fees refers to internal regulations, policies, and market valuations. Different things happen to technology companies. The determination of charging operational costs is also guided by a market survey so that the company's operational costs are not too high and financial financing risks can be anticipated. The results of industry practices also found that the cost control imposed on international companies is set at 32% - 40%. This fee determination is hoped to generate an expected market return of 68%.

Furthermore, the findings (<u>Behera, 2020</u>) state that large businesses in 2008 expected the market value of equity to be determined by a change in required return of 12.2%. The same thing is stated (<u>Behera, 2020</u>) that non-financial companies that go public can gain added economic value and income if they can access appropriate (complete) information. The increase in the market-added value and the economic value of equity is also determined by various factors such as bank debt, completeness of market information, and changes in market value. The company's internal management and individual behavior estimate a positive market value to obtain economic added value. This statement is reinforced in the findings (<u>Bacha & Azouzi 2019</u>) that individual behavior and individual emotions play a role in making credit financing decisions so that they can increase company value.

2.6 Business Growth

Theoretically, in the business life cycle, business growth shows an increase in business value/results, which tends to be positive. Solow growth theory states (<u>Polimeni et al., 2007</u>) that the use and accumulation of capital in the long term can increase economic/business growth in the future. Capital accumulation aims to obtain greater income in the future by saving some of it and reinvesting it. (<u>Hafiz et al., 2022</u>) Small business growth will benefit if handlers and managers formulate the right business strategy. Thus, the results of these investments can provide greater profits in the future.

The business growth stage begins with increased income on the capital used in running the business. At this stage, there is a review of the internal performance of business objectives. Research by <u>Boyd (1986)</u> and <u>Lawrence (1995)</u> described the theory of the business cycle model required an analysis of the relationship between income growth and credit performance. It aims to understand the implications of individual consumption behavior on regulating the use of credit to increase business income. Furthermore (<u>Sanchis-Arellano, 2006</u>) emphasized the results of his research that the regulation is intended to monitor the use of credit is not only for consumption but also for investment. The regulation on the use of credit is meant to anticipate payment failures so that investment credit acts as a hedge for defaults on payments. The research (<u>Acemoglu & Jensen, 2023</u>) contains systematic misperceptions about future variables, such as interest rate or labor income, so the possibility of business growth is always changing.

Research conducted by (Quagliariello, 2007) has provided evidence that in the business cycle during recessionary economic conditions, there is a more severe reduction in credit risk so that credit quality is reflected in income growth. Further clarification from the findings by (Jiménez et al., 2013) (Salas & Saurina, 2002), revenue growth is contemporaneous with credit risk. Other findings by (Beck et al. 2013) indicate a positive correlation between the value of income growth and credit risk (non-performing loans). Furthermore (Chi & Li, 2017) and (Tian et al., 2020) analyzed the impact of credit risk on business growth. The findings show that credit in the future will be able to increase investment value through changes in risk and market prices. When there is an economic slowdown, as stated (Marcucci & Quabliariello, 2009), business activities have stronger credit risks and lower banking assets' quality. It has the potential for problem loans to occur and affect SME credit growth (Aysan, 2019). Thus, the views of economics from the study's results still show different results, especially in emphasizing the relationship between credit risk, income growth, and credit regulation. The emphasis on regulating the use of credit is more varied between investment and consumption credit. The results of this study are clarified by the findings (Prastiwi & Anik, 2020) that credit based on the economic sector impacts profit growth and banking performance in Indonesia. Then (Diamond, 1984) and (Boyd & Prescott, 1986) support the traditional theory that credit diversification will maximize banking performance.

2.7 Credit Risk

Credit risk, in general, can not be avoided. Some experts say about credit risk, such as (<u>Caouette & Altman</u> <u>2005</u>), that credit risk is nothing but the hope of a certain amount of money in a limited time. Credit risk management requires expertise and knowledge. Research conducted by (<u>Guimón, 2005</u>) reinforces the argument that credit risk should be analyzed in terms of potential social impact gaps and practical real impacts so that intellectual capital is needed to classify market barriers as information to companies. Furthermore, the following statement states that credit risk is a consequence of contractual and contingent

financial transactions between providers and users of these funds. Changes in impairment values can also be considered a credit risk. The research conducted (<u>Shehu & Salihu, 2020</u>) showed that to find out credit risk, a credit risk assessment/assessor with an algorithm is needed so that a choice can be made to continue the credit or cancel the credit. Furthermore, similar research by (<u>Jafar Hamid & Ahmed, 2016</u>) predicts credit loans with algorithms to analyze bank customer behavior and possible risks. The research (<u>Katuka et al., 2023</u>) shows that short-run NPL ratio shocks negatively impact the risk-adjusted return, while the impact on risk-adjusted capitalization is positive but dies off in the long run.

Some financial experts (Nason, 2011) mention credit risk as default, performance, and partner risks. These three things are the effects of financial transactions. There are three characteristics regarding the definition of credit risk: (1) exposure disclosure to parties who may default on payments or those who cause losses. (2) the possibility of a party failing due to failing to make a profit. (3) recovery aims to find out how many failed payments. Other experts (Lando, 2009) made credit risk modeling using the logistic regression method to determine the relationship between credit risk. Credit risk assessment and handling require expertise, special competence, and experience to disclose credit failures experienced by credit partners/users. Therefore, the study is more in-depth and varies in research so that credit risk can be reduced by default risk.

The research was conducted by (<u>Tian et al., 2020</u>) in assessing credit risk using the Gradient Boosting Decision Tree (GBDT) model. The findings show that risk assessment using the GBDT model has a higher level of accuracy and stronger generalization ability (90.99%). However, risk assessment with logistic regression and decision tree has a lower accuracy and generalization ability of 74.43% and 84.68%. Differences in the study of credit risk on social impact and the real impact on company performance still require more in-depth research. Changes in individual behavior and information also impact creditor business cycles.

The research hypothesis can be formulated as follows:

H1: SME credit decisions affect business growth. This statement is supported by (<u>Yu et al., 2008</u>). Credit decisions are very important for the sustainability and profit of the company.

H2: Non-SME credit decisions affect business growth. This statement is supported by (<u>Yu et al., 2008</u>) and (Jafar Hamid & Ahmed, 2016). Credit decisions are determined by individual behavior and increased risk.

H3: SME credit decisions affect credit risk. This statement is supported by (<u>Jafar Hamid & Ahmed, 2016</u>) that credit decisions can increase credit risk.

H4: Non-SME credit decisions affect credit risk. This hypothesis statement is supported by (Jafar Hamid & Ahmed, 2016) that credit decisions can increase credit risk.

H5: Non-SME credit decisions affect the credit performance of the bank. This statement is supported by (Behera, 2020).

H6: Non-SME credit decisions affect bank credit performance. This statement is supported by the results (Behera, 2020)

H7: Business growth affects credit risk. This hypothesis statement is supported by (<u>Caouette & Altman</u>, <u>2005</u>), and (<u>Nason, 2011</u>). Failure to make a profit in a business can lead to credit risk.

H8: credit risk affects bank credit performance. This statement is supported by (<u>Kayode et al., 2015</u>), (<u>Prastiwi & Anik, 2020</u>), and (<u>Munangi & Sibindi, 2020</u>), that risky lending can affect bank performance.

3. METHODOLOGY

3.1 Data and Sources

The population of this study is bank credit financing for SMEs and non-SMEs in 2013-2018 in Indonesia. This research method uses secondary data that has been published on http://bi.go.id. The reason for using published data is that data for 2015-2022 and SME and Non-SME financing data are already available. Data is collected from secondary data published on bi.go.id. with observations in 2015-2022. The sample data is in the form of time series data for 2013-2018. The number of observations/samples is 60 observations. Data analysis techniques with SEM-PLS.

3.2. Model Specification

As a multivariate analysis, the SEM-PLS analysis technique can be used to solve problems with large latent variables. SEM-PLS analysis refers to (<u>Monecke & Leisch, 2012</u>), (<u>Chang et al., 2016</u>), and (<u>Latan & Ghozali, 2017</u>) that the data is not normally distributed, the sample is not too large, PLS not only confirms the theory but is also able to explain whether there is a relationship between latent variables, and PLS can estimate larger latent variables. Referring to SEM-PLS is used by (<u>Latan & Ramli, 2014</u>) to solve complex problems related to employees' perceptions of fairness and equality of profit-sharing plans with employees' trust in managers, organizational commitment, and performance. Thus, SEM-PLS in this research is appropriate to answer the objectives: analyzing the relationship of a bank's credit performance with Credit Decision, Business Growth, and Credit Risk. Data analysis with SEM-PLS stated by (<u>Monecke & Leisch, 2012</u>), follows several stages, including evaluation of measurement models, evaluation of structural models, and evaluation of model goodness/fitness. The latent variables used in this study are banking credit performance, credit decisions, business growth, and credit risk.

The bank credit performance variable refers to views (<u>Pille & Paradi, 2002</u>); (<u>Kayode et al., 2015</u>) that capital adequacy decisions determine lending risk will be able to build good banking performance. The credit decision variable refers to the concept (<u>Chi & Li, 2017</u>), which states that credit decisions can increase investment value in the future. Furthermore, referring to the findings (<u>Jafar Hamid & Ahmed, 2016</u>), credit loan decisions with an algorithm analyzed the behavior of bank customers/partners and the possibility of market risk. In this case, the credit decision of the partners in question are Small and Medium Enterprises (SME) and Non-SME partners. All SME and Non-SME Partner credit data has been reported and integrated on bi.go.id, business growth variable refers to the concept (<u>Lawrence, 1995</u>); (<u>Rinaldi & Sanchis-Arellano, 2006</u>); (<u>Prastiwi & Anik, 2020</u>) states that the business cycle can grow to start with increasing income and business, regulating the use of credit/credit diversification.

The credit risk variable referred to (Nason, 2011) states that credit risk is counterparty, default, and performance. Furthermore, modeling for credit risk assessment was carried out by (Lando, 2009) using logistic regression, while (Tian et al., 2020) credit risk assessment using the Gradient Boosting Decision Tree Model. Comparison of credit risk assessment between the logistic regression model (74.43%), the decision tree (84.68%), and the gradient boosting decision tree (90.99%), it is obtained that the gradient boosting decision tree (84.68%), and the gradient boosting decision tree (90.99%), it is obtained that the gradient boosting decision tree has a high accuracy value and a strong ability to assess bank credit risk (90.99%). The measurement scale with a ratio scale is a data value. Primary data through field interviews to complete the description of the test results is not a significant path coefficient of direct or indirect mediation effect. The number of observations/samples is 60 months. Data analysis techniques with SEM-PLS. The stages in the evaluation of model testing include evaluating the measurement model, the structural model, and evaluating the goodness/fit of the model. The mathematical model in research is shown in the following equation. The conceptual framework of this research can be shown in Figure 1.

$Y1 = \alpha + X1\beta 1 + X2\beta 2 + X3\beta 3 + \varepsilon 1$	(1)
$Y2 = \alpha + X1\beta 1 + X2\beta 2 + X3\beta 3 + Y1\beta 4 + \varepsilon_2$	(2)
$Y1 = \alpha + X1\beta 1 + X3\beta 3 + \varepsilon 3.$	(3)
$Y1 = \alpha + X2\beta 2 + X3\beta 3 + \varepsilon 4$	(4)
$Y2 = \alpha + X1\beta 1 + Y1\beta 4 + \varepsilon 5$	(5)
$Y2 = \alpha + X2\beta 2 + Y1\beta 4 + \varepsilon 6$	(6)
$Y2 = \alpha + X1\beta 1 + X3\beta 3 + Y1\beta 4 + \varepsilon 7$	(7)
$Y2 = \alpha + X2\beta 2 + X3\beta 3 + Y1\beta 4 + \varepsilon 8$	(8)



Figure 1. Research concept model

Figure 1 as the research concept model is the result of analysis from theoretical studies, various literature reviews, and modifications to empirical results (Lando, 2009); (Tian et al., 2020) related to credit risk assessment using a logistic regression analysis approach. However, SEM-PLS analysis solves complex problems with many latent variables (Chang et al., 2016); (Latan & Ramli, 2014). SEM-PLS by (Chang et al., 2016) is used to analyze the relationship of manager decision-making to consumer attitudes and innovation in SNS, creating profitable tactics to gain benefits in the trading environment. SEM-PLS (Latan & Ramli, 2014) is used to analyze the relationship between employee perceptions of justice and equality, which can increase organizational trust and commitment and impact performance. Thus, the research concept model in this study can be formulated into a new concept, namely a credit bank performance model, which is linked to credit decisions (SME and Non-SME), business growth, and credit risk. Next, this research concept model will be field tested using time series data and analyzed using SEM-PLS to achieve the research objectives.

4. EMPIRICAL RESULTS AND ANALYSIS

4.1 Evaluating of Outer Model

The results of the evaluation of the measurement model in this study were analyzed using values, namely (1) outer loading greater (>) 0.70; (2) Composite reliability is greater (>) 0.70; (3) The average variance extracted is greater (>) 0.50; (4) VIF > 0.10; (5) Multicollinearity <0.9; (6) Discriminant validity of cross-loadings.

Tal	ole 1 Outer I	Loadings Te	est Results				
Outer Loadings							
Construct	X1	X2	X3	Y1	Y2		
Bus. Cr. Decision	0,735						
Micro Cr.Decison	0,609						
Small Cr.Decision	0,713						
Med.Cr.Decision	0,633						
Non-SME Cr.Decision		0,793					
CB Cr.Decision		0,642					
Invest. Cr.Decision		0,707					
Business Growth			0,678				
CB Bus.Growth			0,694				
Invest.Bus.Growth			0,678				
Bus. Cr.Risk				0,820			
CB Cr.Risk				0,626			
Invest. Cr.Risk				0,712			
Bank Cr. Perform.					0,635		
SME Cr. Perform.					0,755		
Non-SME Cr. Perform.					0,750		

Data source processed (2023)

Table 1 shows the results of the outer loading test greater than 0.50, referring to <u>Latan (2014)</u>. If the results of outer loadings exceed 0.50, it indicates that the percentage of constructs can explain the variations in the indicators. Furthermore, the results of the Composite Reliability test are shown in Table 2.

Table 2Composite Reliability Test Results						
Construct	Composite	omposite Reliability Average Variance Extracted (AVE)				
	(CR)					
SME credit decisions	0.768		0.555			
Non-SME Credit Decisions	0.759		0.514			
Business Growth	0.725		0.567			
Credit Risk	0.765		0.524			
Bank Credit Performance	0.758		0.512			

Table 2 shows the Composite Reliability (CR) test results greater than 0.70. The overall variable construct of the CR value shows a value greater than 0.70, so the evaluation of the CR measurement model is acceptable. Table 3 shows the results of the Average Variance Extracted (AVE) test, which is greater than the value of 0.50. This value means evaluating the measurement model with an acceptable AVE value. Furthermore, the evaluation of the measurement model with VIF values is shown in Table 3.

Table 3 Test results of Variance Inflation Factor (VIF)				
Construct	VIF			
Bus. Cr. Decision	I,311			
Micro Cr. Decision	1,212			
Small Cr.Decision	1,239			
Medium Cr.Decision	1,266			
.Non-SME Cr.Decision	1,251			
CB Cr.Decision	1,221			
Invest. Cr.Decision	1,070			
Business Growth	1,065			
CB Bus. Growth	1,069			
Invest.Bus.Growth	1,097			
Bus. Cr. Risk	1,154			
CB Cr. Risk	1,134			
Invest Cr.Risk	1,194			
Bank Cr.Performance	1,126			
SME Cr.Performance	1,112			
Non-SME Cr.Performance	1,190			

Data source processed (2023)

Table 3 shows the results of the VIF test with no value exceeding 5, so there is no multicollinearity between the independent variables. Thus, evaluating the measurement model from the VIF value is acceptable. Then, the evidence with Discriminant Validity can be shown in Table 4.

Table 4 Discriminant Validity Test Results								
Construct	X1	X2	X3	Y1	Y2			
SME Credit Decision (X1)	0.675							
Non-SME Credit Decision (X2)	-0.307	0.717						
Business Growth(X3)	-0.117	0.533	0.684					
Credit Risk (Y1)	-0.485	0.482	0.461	0.724				
Bank Credit Performance (Y2)	- 0.211	0.230	0.162	0.365	0.715			
1(

Data source processed (2023)

Table 4 shows that the results of the discriminant validity test have the highest correlation value compared to the correlation values of other variables. Based on the results of Cross Loadings calculations with Fornell Larker Cross Loadings, the discriminant validity requirements in this study have been fulfilled.

4.2 Evaluating of Structural Model

Assessment of the relationship model in the formation of structures in this study was carried out by evaluating structural models. Evaluation of the structural model in this study can be done using values, namely: (1) Direct path coefficient, (2) Indirect path coefficient, (3) F-square Total effect. The results of proving the structural model evaluation can be shown in Table 5, Table 6, and Table 7.

The assessment for suitability/goodness in the research model is carried out by evaluating the suitability/goodness of the model. Evaluation of the model's goodness in this study can be shown from the value of R-square and Q-square. The test results to answer the research hypothesis and R-Square testing can be shown in Table 8 and Table 9.

	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDev)	T-Statistics (IO/STDEV)	P-values
SME Cr. Dec. (X1)	0.052	0.039	0.149	0.346	0.730
->Business Growth (X3)					
Non-SME Cr.Dec.(X2)	-0.388	-0.401	0.112	3.456	0.001
->Risk Cr.(Y1)					
Non-SME Cr.Dec.(X2)	0.549	0.585	0.111	4.938	0.000
->Business Growth (X3)					
Non-SME Cr.Dec.(X2)	0.198	0.224	0.154	1.279	0.201
-> Cr. Risk (Y1)					
Business Growth(X3) ->Cr. Risk	0.310	0.286	0.135	2.298	0.022
(Y1)					
Cr. Risk (Y1)	0.365	0.402	0.102	3.567	0.000
->bank Cr. Performance(Y2)					

Table 5 Direct Path Coefficients Test Results

Data source processed (2023)

The results of the Direct Path Coefficient (DPC) test in Table 5 as an evaluation of the structural model in this study indicate that non-SME credit decisions have a significant effect on business growth (P-values 0.000 < 0.05) with a coefficient of 0.549 with a T-statistic of 4.938 greater than (T-table significant α 5%; 2.024). Likewise, non-SME credit decisions have a negative and significant effect on credit risk (P-values 0.001 < 0.05) with a coefficient of -0.388 and a T-statistic of 3.456 greater than (T-table significant α 5%; 2.024). Furthermore, business growth directly and significantly affects credit risk (P-values 0.022). P-Values of 0.022 <0.05, with a parameter coefficient of 0.310. Business growth positively affects credit risk, and the T-Statistics value is 2,298 (T-table is significant α 5%; 2.024). Then, the results of the Direct Path Coefficient (DPC) test also show that credit risk has a direct positive and significant effect on bank credit performance (P-values 0.000 < 0.05) with a coefficient of 0.365 and a T-statistic of 3.567 greater than (T-table significant α 5%; 2,024). However, other test results show that SME credit decisions do not directly affect business growth (P-values 0.730) > 0.05. In addition, non-SME credit decisions do not directly affect credit risk (P-values 0.201)>0.05. SME credit decisions do not have a direct effect on business growth, referring to findings (Boushnak et al., 2018) that credit decisions are determined by the character of the manager, capital structure, and the company's financial credibility, so a credit risk assessment process framework is needed to reduce uncertainty. Thus, non-SME credit decisions do not directly affect credit risk and business growth. Support from other findings (Mervi Niskanen & Jyrki Niskanen, 2010), credit/loan decisions depend on SME managerial, financial ownership balanced with business growth. If SME finances increase, credit/loan decisions and interest will decrease. Similar findings (Munangi & Sibindi, 2020) reinforce this result that credit risk hurts performance.

Table 6 Specific Indirect Path Coefficient Test Results							
	Original Sample Standard T-Statistics						
	Sample	Mean	Deviation	(IO/STDEV)			
	(0)	(M)	(STDev)				
SME Cr. Dec. (X1)->Business Grow(X3)-> Cr.	0.016	0.011	0.047	0.341	0.733		
Risk(Y1)							
Non-SME Cr. Dec. (X2)->Business Grow(X3)-> Cr.	0.170	0.167	0.087	1.959	0.051		
Risk(Y1)							
SMECr.Dec.(X1)->Cr.Risk(Y1)	-0.142	-0.161	0.062	2.279	0.023		
-> Bank Cr. Performance(Y2)							
Non. SME Cr. Dec.(X2)->Cr.Risk(Y1)-> Cr.Risk (Y2)	0.072	0.091	0.071	1.018	0.309		
SME Cr. Dec. (X1)-> Business Growth (X3)->	0.006	0.006	0.021	0.281	0.799		
Cr.Risk (Y1)->Bank Cr. Perform(Y2)							
Business Growth(X3)-> Cr.Risk (Y1)	0.113	0.114	0.063	1.781	0.075		
->Bank Cr. Performance(Y2)							
Non.SME Cr. Dec. (X2)->Business Growth (X3)->	0.062	0.067	0.041	1.496	0.135		
Cr. Risk (Y1)>Bank Cr. Performance(Y2)							

Data source processed (2023)

The results of the Specific Indirect Path Coefficient (SIPC) test in Table 6 show that SME credit decisions indirectly affect bank credit performance by mediating credit risk. P-values of 0.023 < 0.05 evidence this result with a coefficient value of -0.142 and a T-statistic of 2.279 > 2.024. It means the T-statistic is greater than (significant T-table α 5%; 2.024). The Specific Indirect Path Coefficient test results show that credit risk variables can mediate between credit decisions and bank credit performance. This result is reinforced by (Munangi & Sibindi, 2020) that credit risk negatively affects performance. However, business growth has a positive effect on bank credit performance. The results of this test are supported by the findings (Boushnak et al., 2018) that credit decisions are determined by the character of the manager, capital structure, and the company's financial credibility, so a credit risk assessment process framework is needed to reduce uncertainty. Management of bank credit risk by applying the right rules can help minimize credit and market risks. Furthermore, similar findings are supported by (Murad, 2021), that the demand for money in the form of demand for credit is a functional relationship between high exchange rate elasticity and low-income elasticity. Thus, credit decisions depend on credit risk, which debtor and market risks determine. The higher the debitor risk and market risk, the lower the bank's performance, so credit decisions with bank credit performance mediated by credit risk have a negative coefficient. Similar findings are supported by (Liu & Liu, 2012) regarding bank credit/loans for SMEs requiring a risk assessment based on the theory of credibility and risk measurement and evaluation of SME loans/credit. The findings show the same thing (Yacui Gao, 2018). Assessing SME credit risk is difficult with small sample data (30) of commercial banks, even though testing the logit regression model has a predicted accuracy of 93.4%. Therefore, a new model is needed for credit risk assessment by considering macro and non-financial variables such as changes in exchange rates, people's income, market valuations, managerial character, and credibility.

Table 7 Total Effects							
Construct	Original	Sample	Standard	T-Statistics	P-values		
	Sample	Mean	Deviation	(IO/STDEV)			
	(0)	(M)	(STDev)				
SME Cr. Dec.(X1)	0.052	0.039	0.149	0.346	0.730		
->Business Growth(X3)							
Non-SME Cr. Dec(X2) 0.549	0.585	0.111	4.938	0.000		
->Business Growth(X3)							
SME Cr. Dec.(X1)	-0.372	-0.390	0.115	3.240	0.001		
->Risk.Cr(Y1)							
Non-SME Cr.Dec.(X2)->Cr. Risk (Y1).	0.368	0.391	0.125	2.930	0.004		
SME Cr.Dec.(X1)->Bank Cr	0.136	-0.155	0.059	2.303	0.022		
Perfomance(Y2)							
Non-SME Cr.Dec.(X2)->Banl	x 0.134	0.159	0.069	1.943	0.053		
Cr.Performance(Y2)							
Business Growth (X3)-> Cr.Risk(Y1)	0.310	0.286	0.135	2.298	0.022		
Cr.Risk(Y1)->Bank Cr.Performance(Y2)	0.365	0.402	0.102	3.567	0.000		
Data source processed (2023)							

Testing the results of the total effect in Table 7 is matched with a standard value of P-values <0.05. Then, the coefficient value (original sample) with category 0.1 is classified as weak, 0.3-0.5 is classified as large, and 0.5-0.9 is classified as very large. Tstatistic test value > T-table α 5% of 2.024. The results of the Total Effect test in Table 8 show that SME credit decisions cannot affect business growth. It is evidenced by P-values 0.730 > 0.05 with a coefficient value of 0.052 and a statistic of 0.346 <2.024. Furthermore, non-SME credit decisions positively and significantly affect business growth. It is evidenced by P-values 0.000 < 0.05 with a coefficient value of 0.549 and Tstatistic 4.938> 2.024. The results of the total effect test for other variables also show that SME credit decisions have a negative and significant effect on credit risk. It is evidenced in Pvalues 0.001 with a coefficient of -0.372 and Statistics 3.240> 2.024. Non-SME credit decisions have a positive and significant effect on credit risk. It is evidenced by the P-values of 0.004 and the coefficient value of 0.368 with a T-statistic of 2.930 > 2.024. Furthermore, it was also found that SME credit decisions had a negative, weak, and significant effect on bank credit performance. It is evidenced by P-values 0.022 < 0.05 with a coefficient value of -0.136 and T-statistic 2.303> 2.024. Non-SME credit decisions have no significant effect on bank credit performance. It is evidenced by P-values 0.053 > 0.05 and a coefficient value of 0.134. Business growth has a positive and significant effect on credit risk. It is evidenced by P-values 0.022 < 0.05 with a coefficient value of 0.310 and T-statistic 2.298> 2.024. Credit risk has a positive and significant effect on bank credit performance. It is evidenced by P-values of 0.000 with a coefficient of 0.365 and a statistic of 3.567.

4.3 Research Hypothesis Testing

Proving the hypothesis with the test results is shown in Table 9. The test results can be explained as follows.

Hypothesis (1) SME credit decisions do not affect business growth. This statement is supported by (<u>Yu et al., 2008</u>). Credit decisions are very important for the company's sustainability and future profit. However, the results are reversed with the results of statistical testing that SME credit decisions do not affect business growth. These results are reinforced by (<u>Marcucci & Quabliariello, 2009</u>) and (<u>Chi & Li, 2017</u>), that credit decisions do not affect the business/business cycle due to asymmetric factors. Then, credit decisions can increase the investment value in the future, while SME credit decisions are generally short-term as operational capital. Furthermore, referring to the findings (<u>Jafar Hamid & Ahmed, 2016</u>), credit loan decisions are carried out by analyzing the behavior of bank customers/partners and the possibility of a risk of default.

Hypothesis (2) non-SME credit decisions affect business growth. This statement is supported by (<u>Yu et al.</u>, <u>2008</u>), (<u>Jafar Hamid & Ahmed</u>, <u>2016</u>), and (<u>Chi & Li</u>, <u>2017</u>). Credit decisions are determined by individual behavior and increased risk, and credit decisions can increase business value in the future/long term. Furthermore (<u>Mutsonziwa</u>, <u>2021</u>) found that informal credit decisions can increase business growth.

Hypothesis (3) SME credit decisions affect credit risk. This statement is supported by (<u>Jafar Hamid & Ahmed</u>, <u>2016</u>) that credit decisions can increase credit risk. The results of this study are also supported by the findings (<u>Bekhet & Eletter</u>, <u>2014</u>) that before making a credit decision, it is necessary to understand the customer's financial history so that credit risk is low.

Hypothesis (4) suspected that non-SME credit decisions affect credit risk. This hypothesis statement is supported by (<u>Hamid & Ahmed, 2016</u>) that credit decisions can increase credit risk. However, on the contrary, research has found (<u>Bekhet & Eletter, 2014</u>) that credit decisions are made after information and understanding of the customer's financial history and credit analysis have been understood to minimize credit risk.

Hypothesis (5) predicts that SME credit decisions affect bank credit performance. This statement is supported by (<u>Hussein & Abdou, 2011</u>) that credit assessment is important for making credit decisions and its impact on performance evaluation.

Hypothesis (6) predicts that non-SME credit decisions do not affect bank credit performance. This statement is supported by (<u>Munangi & Sibindi, 2020</u>) and (<u>Harris & Campus, 2015</u>), that credit decisions and the impact on performance are carried out through scoring by comparing the results of clustered support vector machines (CSVM) and traditional nonlinear support vector machines (SVM). Credit decisions using the CSVM method can assess performance and calculate more precisely.

Hypothesis (7) business growth affects credit risk. This hypothesis statement is supported by (<u>Caouette & Altman, 2005</u>) and (<u>Nason, 2011</u>). Failure to make a profit in a business can lead to credit risk. Furthermore, proper credit management will increase business growth, whereas inaccurate credit management in a business will create risks.

Hypothesis (8) credit risk affects bank credit performance. This statement is supported by (<u>Kayode et al.</u>, <u>2015</u>), (<u>Prastiwi & Anik, 2020</u>) and (<u>Munangi & Sibindi, 2020</u>), that by channeling credit properly, the risk will be lower and will be able to form better bank performance. Other findings by (<u>Zhao Wang et al., 2020</u>) show that evaluating credit risk based on correct knowledge and information impacts performance discrimination and rewards. Furthermore, the results of testing the research hypothesis can be displayed in Table 9.

Table 8 Summary of Results and Testing of Research Hypotheses						
Coefficient	T-Statistics	P-Values	Decision			
value						
0.052	0.346	0.730-Non Sig	H1 rejected			
-0.372	3.240	0.001-Sig	H1 accepted			
-0.136	2.303	0.022-Sig	H1 accepted			
0.549	4.938	0.000-Sig	H1 accepted			
0.368	2.930	0.004-Sig	H1 accepted			
0.134	1.943	0.053-Non Sig	H1 rejected			
0.310	2.298	0.022-Sig	H1 accepted			
0.365	3.567	0.000-Sig	H1 accepted			
	f Results and 7 Coefficient value 0.052 -0.372 -0.136 0.549 0.368 0.134 0.310 0.365	f Results and Testing of Reservation Coefficient T-Statistics value 0.052 0.346 -0.372 3.240 -0.136 2.303 0.549 4.938 0.368 2.930 0.134 1.943 0.310 2.298 0.365 3.567	f Results and Testing of Research Hypotheses Coefficient value T-Statistics P-Values 0.052 0.346 0.730-Non Sig -0.372 3.240 0.001-Sig -0.136 2.303 0.022-Sig 0.549 4.938 0.000-Sig 0.368 2.930 0.004-Sig 0.134 1.943 0.022-Sig 0.310 2.298 0.022-Sig 0.365 3.567 0.000-Sig			

Data source processed (2023)

The results of testing the research hypothesis, as in Table 8, provide meaning for testing Hypothesis (1), indicating that SME credit decisions cannot affect business growth. This result is reinforced by (Marcucci & Quabliariello, 2009) and (Chi & Li, 2017), that credit decisions do not affect the business cycle. Furthermore, testing hypothesis (2) shows that non-SME credit decisions positively and significantly affect business growth. The results of testing Hypothesis (3) show that SME credit decisions negatively and significantly affect business growth. The results of testing on the hypothesis (4) Non-SME credit decisions have a positive and significant effect on credit risk. Furthermore, the results of testing Hypothesis (5) also found that SME credit decisions have a negative, weak, and significant effect on bank credit performance. The results of hypothesis testing (6) show that non-SME credit decisions are very important for the sustainability and profit of the company in the future, while credit decisions measure credit performance in the short term. Decisions and diversification cannot properly differentiate credit performance except with the CSVM method (Harris & Campus, 2015). The results of hypothesis (8) results show that credit risk has a positive and significant effect on bank credit performance.



Figure 2. Construction of the SEM-PLS model from research results

Figure 2 shows the research model with SEM-PLS analysis. SME credit decisions partially do not affect business growth. However, SME credit decisions and non-SME credit decisions do affect business growth. SME and Non-SME credit decisions affect credit risk. Credit risk affects bank credit performance. The results of testing the R-value can be shown in Table 9.

Table 9 Inner Model Test Results							
Constructs	R square	R	square				
	-	Adjusted	-				
Business Growth(X3)	0.287	0.259					
Credit Risk (Y1)	0.426	0.392					
Bank Credit PerformanceY2	0.133	0.116					
1 ()							

Data source processed (2023)

The results of Q^2 predictive relevance are said to be good if the value is >0.36 indicating a good (appropriate) exogenous latent variable as an explanatory variable capable of predicting the endogenous variable. Proof of Q^2 is as follows.

Q-Square = $1 - [(1 - R_{21}) \times (1 - R_{22}) \times (1 - R_{33})]$

= $\mathbf{0.355.}$ Next goodness of fit (Q²)

= 0.355 (rounded) to 0.36, classified as large (good). The standard criterion for assessing the goodness of the model is if the standard is 0.10 small criteria (weak), 0.25 moderate criteria (moderate), and 0.36 large criteria (good).

Figure 2 explains that the construction of a bank credit performance model is determined/influenced by SME and non-SME credit decisions, business growth, and credit risk. Credit decisions for assessors should be based on complete knowledge and information from partners so that credit distribution is right for users and risks can be minimized. The latest finding in this model is that credit risk has the potential to act as a mediator between business growth and bank credit performance. In addition, the right credit decisions can increase business growth, and the business cycle runs well so that credit risks that arise are low. With credit management that can increase profit and business, the credit risk is low, and the impact on bank credit performance is improving. These results are consistent with findings (Caouette & Altman, 2005); (Nason, 2011) that the use of credit that fails to gain profit in business can lead to credit risk, whereas the use of credit that can increase profits will be able to reduce risk and have a better impact on the company's financial performance.

4.4 Analysis and Discussion

Based on the test results and the calculation of the estimated value for each model, it can be shown in Table 10 below.

The Mathematical Equation	Q^2	Classified
(1) $Y1 = \alpha + X1\beta 1 + X2\beta 2 + X3\beta 3 + \varepsilon$	0.287	Moderate
(2) $Y2 = \alpha + X1\beta 1 + X2\beta 2 + X3\beta 3 + Y1\beta 4 + \varepsilon$	0.35	Strength
$(3) Y1 = \alpha + X1\beta 1 + X3\beta 3 + \varepsilon$	0.287	Moderate
$(4) Y1 = \alpha + X2\beta 2 + X3\beta 3 + \varepsilon$	0.287	Moderate
(5) $Y2 = \alpha + X1\beta 1 + Y1\beta 4 + \varepsilon$	0.427	Strength
(6) $Y2 = \alpha + X2\beta 2 + Y1\beta 4 + \varepsilon$	0.427	Strength
$(7) Y2 = \alpha + X1\beta 1 + X3\beta 3 + Y1\beta 4 + \varepsilon$	0.877	Strength
(8) $Y2 = \alpha + X2\beta 2 + X3\beta 3 + Y1\beta 4 + \varepsilon$	0.877	Strength

Data source processed (2023)

Based on Table 10, the results of the analysis of the mathematical model that has been prepared, it can be explained that The mathematical model on equations (1), (3), and (4) as a credit risk model associated with SME credit decisions, non-SME decisions, and business growth has a model strength of 0.287 which is classified as moderate. This result means that SME credit decisions, non-SME credit decisions, and business growth determine credit risk. These results are strengthened by the findings of (Yu et al., 2008); (Marcucci & Quabliariello, 2009); (Chi & Li, 2017) that redit decisions are very important for the sustainability and profit of the company in the future. However, the results are reversed with the results of statistical testing that SME credit decisions do not affect business growth. These results are reinforced by (Marcucci & Quabliariello, 2009). Then, credit decisions can increase the investment value in the future, while SME credit decisions are generally short-term as operational capital. Furthermore, referring to the findings (Jafar Hamid & Ahmed, 2016), credit loan decisions are carried out by analyzing the behavior of bank customers/partners and the possibility of a risk of default.

The mathematical model on Equations (2), (5), (6), (7), and (8) as a model of bank credit performance which is linked to SME credit decisions, non-SME decisions, business growth, and credit risk has strength the model is classified as strong. Each equation (2) has a predictive value of 0.35; equation (5) has a predictive value of 0.427; equation (6) has a predictive value of 0.427; equation (7) has a predictive value of 0.877; equation (2) has a predictive value of 0.877; equation (2) has a predictive value of 0.877. These results mean that SME credit decisions, non-SME credit decisions, business growth and credit risk determine the bank credit performance. The results of this study are also supported by the findings (Bekhet, 2014) that before making a credit decision, it is necessary to understand the customer's financial history so that credit risk is low. The findings (Jafar Hamid & Ahmed, 2016), credit loan decisions are carried out by analyzing the behavior of bank customers/partners to result in individual performance. These results are strengthened by the findings of (Yu et al., 2008); (Marcucci & Quabliariello, 2009); (Jafar Hamid & Ahmed, 2016) that credit decisions are very important for the sustainability and profit of the company in the future and bank performance. This statement is supported by (Hussein & Abdou, 2011) that credit assessment is important for making credit decisions and its impact on performance evaluation.

Comparison between bank credit performance models associated with SME and Non-SME credit decisions in establishing a bank performance model that does not need business grouping in making credit decisions. This

is supported by (<u>Chi & Li, 2017</u>) that credit decisions do not affect the business/business cycle due to asymmetric factors but are moderated by marketization level and financial depth. Then, credit decisions can increase the investment value in the future, while SME credit decisions are generally short-term as operational capital. Thus, the strength of the estimated value of a bank's credit performance model is not determined by credit decisions on SME and Non-SME in the group classification but is determined by business growth and credit risk.

5. CONCLUSION AND SUGGESTION

Agency theory implies that the relationship between SMEs/Non-SMEs and the Bank explains the capital structure of debt and has a positive and significant effect on agency costs. SME or Non-SME debtors can prevent unnecessary company expenses and encourage more efficient company managers. The relationship between Banks and SMEs/Non-SMEs and Banks is the practice of agency theory. The decision to grant credit to SMEs/Non-SMEs can improve the bank's performance. Simultaneously, bank credit performance is influenced by SME and non-SME credit decisions, business growth, and credit risk. The relationship pattern of credit decisions to business growth and credit risk is the direct (direct path coefficient) and indirect (specific indirect path coefficient) relationships. Credit decisions for assessors are based on complete knowledge and information from partners so that credit distribution is right for credit users and risks can be minimized. SME credit decisions individually cannot affect business growth. However, SME and non-SME credit decisions can affect business growth.

Non-SME credit decisions cannot affect credit risk individually. However, SME and non-SME credit decisions affect credit risk. The theoretical implication of the Merton model for this research is that debt poses a high risk due to asymmetric information, so individual understanding and knowledge are needed in accessing debt capital. The practical implication of this research is that proper debt management and correct access to information can lead to business growth and low risk, thus impacting the bank's performance.

The research findings show that business growth affects credit risk. Credit risk can determine a bank's credit performance. The latest finding in this model is that credit risk has the potential to act as a mediator between business growth and bank credit performance. It means that the correct decision to use credit can increase business growth and the business cycle so that the credit risk that appears is low. If the business growth and business cycle are good, it will have an impact on credit repayments to be smooth so that the bank's credit performance will be better. Thus, the strength of the estimated value of a bank's credit performance model is not determined by credit decisions on SME and Non-SME in the group classification but by business growth and credit risk.

The limitation of this research is the use of time series data before COVID-19 so that this research can be redeveloped into research on credit financing during New Normal conditions and COVID-19. Data analysis needs to be developed in the form of discriminant analysis of credit financing before COVID-19, during COVID-19, and the new normal conditions with credit diversification.

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LIMITATIONS

This research uses secondary data that has been published by official institutions, so researchers cannot verify secondary data personally with banking institutions or bank customers as credit recipients. However, this data can be scientifically justified.

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Early career as a researcher/academic specializing in economics and financial management with involvement in science management and the business world. Attendance of research programs at universities in research and service centers has stimulated interest in developing economic-financial science for the business community. Since 7 years ago until now, various questions have arisen such as: how do micro and medium scale businesses manage business with bank loans"; how is the business growth; what are the business risks. This research has proved to be valuable in micro business studies and this essay examines creditor financing decisions, business growth, risk and banking performance that can be achieved in Indonesia.

Christimulia Purnama Trimurti

Contribution/Originality: an associate professor in the field of development economics who cares about the social economy of society. Some of the resulting research results have been published in the Scopus journal, producing many books on management and economics. This research contributes to the advancement of community welfare through funding decisions in improving business in Indonesia. Many micro businesses in Indonesia receive financial support from financial institutions. Researchers want to know in depth the funding support from financial institutions

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Contribution/Originality: Starting his career as a researcher/academic specializing in accounting, finance and taxation. Participates in research programs at universities and is active in developing the fields of accounting, finance and taxation. Until now, developments in the fields of finance, accounting and taxation have adopted developments in digital and information technology. In the field of micro, small and medium enterprises, they have taken part in the financial sector, including financing and business growth and financial performance in Indonesia.

REFERENCES

- 1. Abdullah, M. F., Amin, M. R., & Rahman, A. (2017). Is there any difference between Islamic and conventional microfinance? Evidence from Bangladesh. *International Journal of Business and Society*.18(S1):97-112.
- 2. Acemoglu, D., & Jensen, M. K. (2023). Equilibrium Analysis in Behavioral One-Sector Growth.March
- 3. Acharya, Y. P., & Acharya, U. (2006). Sustainability of microfinance institution from small farmers perspective: a case of rural Nepal. *International Review of Business Research Papers*.
- 4. Aysan, A.F. & Disli, M. (2019). Small business lending and credit risk: Granger causality evidence. *Economic Modelling*, *83*, 245–255. https://doi.org/https://doi.org/10.1016/j.econmod.2019.02.014
- 5. Albaity, M., Noman, A. H. M., Saadaoui Mallek, R., & Al-Shboul, M. (2022). Cyclicality of bank credit growth: Conventional vs Islamic banks in the GCC. *Economic Systems*, 46(1). https://doi.org/10.1016/j.ecosys.2021.100884
- 6. Bekhet, H.A & Eletter,S. (2014). Credit risk assessment model for Jordanian commercial banks: Neural scoring approach. *Review of Development Finance*, *4*(1), 20–18.
- 7. Behera, S. (2020). Does the EVA valuation model explain the market value of equity better under changing required return than constant required return? *Financial Innovation*, *6*(1). https://doi.org/10.1186/s40854-019-0167-8
- 8. Beck, R., Jakubik, P. and Piloiu, A. (2013). Non-performing loans: What matters in addition to the economic cycle? *Working Paper Series*, no.1515. https://doi.org/No 1515, Working Paper Series from European Central Bank
- 9. Bekhet, H.A., Eletter, S.F.K. (2014). Credit risk assessment model for Jordanian commercial banks: Neural scoring approach. *Review of Development Finance*, 4(1), 20–18.
- 10. Bhaskaran, R. K., Sujit, K. S., & Mongia, S. (2023). Linkage between performance and sustainability initiatives in banking sector–An empirical examination. *International Journal of Productivity and Performance Management*, *72*(1). https://doi.org/10.1108/IJPPM-07-2020-0385
- 11. Botha, M., Van Vuuren, J. J., & Kunene, T. (2015). An integrated entrepreneurial performance model focusing on the importance and proficiency of competencies for start-up and established SMEs. *South African Journal of Business Management*, *46*(3), 55–66. https://doi.org/10.4102/sajbm.v46i3.101
- 12. Boushnak, E. , Rageb, M. , Ragab, A. and Sakr, A. (2018). Factors Influencing Credit Decision for Lending SMEs: A Case Study on National Bank of Egypt. *Scientific Research An Academic Publisher*, 5(11), 1–17. https://doi.org/doi: 10.4236/oalib.1104996.
- 13. Boyd, J. H., Prescott, E. C. (1986). Financial intermediary-coalitions. *Journal of Economic Theory*, 38(2), 211–232. https://doi.org/https://doi.org/10.1016/0022-0531(86)90115-8
- 14. Chang, S. E., Shen, W. C., & Liu, A. Y. (2016). Why mobile users trust smartphone social networking services? A PLS-SEM approach. *Journal of Business Research*. https://doi.org/10.1016/j.jbusres.2016.04.048
- 15. Chen, S., Ma, H., & Wu, Q. (2019). Bank credit and trade credit: Evidence from natural experiments. *Journal of Banking and Finance*, *108*. https://doi.org/10.1016/j.jbankfin.2019.105616
- 16. Chi, Q., & Li, W. (2017). Economic policy uncertainty, credit risks and banks' lending decisions: Evidence from Chinese commercial banks. *China Journal of Accounting Research*, 10(1), 33–50. https://doi.org/https://doi.org/10.1016/j.cjar.2016.12.001
- 17. Diamond, D. W. (1984). Financial intermediation and delegated monitoring. *The Review of Economic Studies*, *51*(3), 393–414. https://doi.org/https://doi.org/10.2307/2297430
- 18. Guimón, J. (2005). Intellectual capital reporting and credit risk analysis. *Journal of Intellectual Capital*, 6(1), 28–42. https://doi.org/10.1108/14691930510574645
- 19. Hafiz, N., Latiff, A. S. A., Islam, M. A., Saif, A. N. M., & Wahab, S. A. (2022). Towards the Underlying Theories of Small Firm Growth: A Literature Review. *FIIB Business Review*, 11(1), 36–51.

https://doi.org/10.1177/23197145211049627

- 20. Harris, T., & Campus, C. H. (2015). Credit Scoring Using The Clustered Support. *Expert Systems with Applications*, *42*(2), 741–750.
- 21. Hussein A. Abdou, J. P. (2011). Credit Scoring, Statistical Techniques And Evaluation Criteria: A Review Of The Literature. *Intelligent System in Accounting, Finance and Management An International Journal*, 8(2–3), 59–88.
- 22. Irwansyah, Lestari, Y., & Adam, N. F. (2020). Pengaruh ukuran perusahaan dan leverage terhadap agency cost pada perusahaan otomotif yang terdaftar di bursa efek indonesia. *Jurnal Ekonomi, Keuangan Dan Manajemen, 16*(2), 259–267. http://journal.feb.unmul.ac.id/index.php/INOVASI (in Indonesian)
- 23. Jafar Hamid, A., & Ahmed, T. M. (2016). Developing Prediction Model of Loan Risk in Banks Using Data Mining. *Machine Learning and Applications: An International Journal*, 3(1), 1–9. https://doi.org/10.5121/mlaij.2016.3101
- 24. Jiménez, Gabriel, Lopez, Jose A. & Saurina, J. (2013). How does competition affect bank risk-taking? *Journal of Financial Stability*, 9(2), 185–195. https://doi.org/DOI: 10.1016/j.jfs.2013.02.004
- 25. John B. Caouette, Edward I. Altman, P. N. (2005). *Managing Credit Risk: The Next Great Financial Challenge (Frontiers in Finance Series) 1st Edition*, Wiley Frontier in Finance, ISBN-13 978-0471111894.
- 26. Katuka, B., Mudzingiri, C., & Vengesai, E. (2023). The effects of non-performing loans on bank stability and economic performance in Zimbabwe. *Asian Economic and Financial Review*, *13*(6), 393–405. https://doi.org/10.55493/5002.v13i6.479
- 27. Kayode, O. F., Obamuyi, T.M., Ayodeleowoputi, J., & Ademolaadeyefa, F. (2015). Credit risk and Bank performance in Nigeria. *Journal of Economics and Finance (IOSR-JEF)*, 6(2), 21–28. https://doi.org/www.iosrjournals.org
- 28. Lando, D. (2009). Handbook of Financial Time Series. In Handbook of Financial Time Series. https://doi.org/10.1007/978-3-540-71297-8
- 29. Latan, H., & Ramli, N. A. (2014). The Role of Organizational Justice, Trust and Commitment in a Management Control System (MCS)- Gain Sharing. *International Journal of Accounting and Financial Reporting*, 1(1), 186. https://doi.org/10.5296/ijafr.v4i2.6238
- 30. Latan, H., & Ghozali, I. (2017). *Partial Least Squares: Concept, Method, and Application used WarpPLS* 5.0 Program (Third Edit). Semarang: Diponogoro University.
- 31. Latukha, M. O., & Panibratov, A. Y. (2015). Top management teams' competencies for international operations: Do they influence a firm's result? *Journal of General Management*, 40(4). https://doi.org/10.1177/030630701504000404
- 32. Lawrence, E. C. (1995). Consumer default and the life cycle model. *Journal of Money, Credit and Banking*, *27*(4), 939–954.
- 33. Liu, C. and Liu, X. (2012). SME Credit Risk Assessment Based on Credibility Theory. *Technical Economics and Management Research*, *10*, 3–7.
- 34. Marcucci,J., & Quabliariello,M. (2009). Asymmetric effects of the business cycle on bank credit risk. Journal of Banking & Finance, 33, 1624–1635.
- 35. Mamun, A. Al. (2016). Access to Credit, Education, and Entrepreneurial Competencies: A Study among Women Micro-entrepreneurs in Malaysia. *Vision*, *20*(3). https://doi.org/10.1177/0972262916651510
- 36. Mervi Niskanen & Jyrki Niskanen. (2010). Small Business Borrowing and the Owner–Manager Agency Costs: Evidence on Finnish Data. *Journal of Small Business Management, Taylor & Francis Journals*, 48(1), 16–31.
- 37. Monecke;, A. L. (2012). SEM-PLS: Structural Equation Modeling Using Partial Least Squares. Journal of Statistical Software, 48(3), 1–32. https://doi.org/10.18637/jss.v048.i03
- 38. Munangi, E., & Sibindi, A. B. (2020). An empirical analysis of the impact of credit risk on the financial performance of South African banks. *Academy of Accounting and Financial Studies Journal*, *24*(3), 1–15.
- Murad. MW, (2021). Asymmetric Effects of Economic Uncertainty on Money Demand Function in Bangladesh: A Nonlinear ARDL and Cumulative Fourier Causality Approach. "International Journal of Business and Economics, School of Management Development, 20(3), 201–213.
- 40. Mutsonziwa, K. A. B. F. (2021). Small Business Performance: Is It Access to Formal or Informal Credit that Matters? *Journal of African Business*, *22*(1), 550–563.
- 41. Nason, R. (2011). Credit Risk Management. Enterprise Risk Management, 2016(1044), 261–278. https://doi.org/10.1002/9781118267080.ch15
- 42. Olabamiji, O. & Michael, O. (2018). Credit management practices and bank performance: Evidence from First Bank. *South Asian Journal of Social Studies and Economics*, 1(1), 1–10. https://doi.org/https://doi.org/10.9734/sajsse/2018/v1i125772
- 43. Obschonka, M., Silbereisen, R. K., & Schmitt-Rodermund, E. (2012). Explaining entrepreneurial behavior: Dispositional personality traits, growth of personal entrepreneurial resources, and business idea generation. *Career Development Quarterly*. https://doi.org/10.1002/j.2161-0045.2012.00015.x
- 44. Pille, P. & Paradi, J. (2002). Financial performance analysis of Ontario (Canada) Credit Unions: An

application of DEA in the regulatory environment. *European Journal of Operational Research*, *139*(2), 339–350. https://doi.org/https://doi.org/10.1016/S0377-2217(01)00359-9

- 45. Polimeni, J.M., Polimeni, R.L., W. Scott Trees, W. (2007). Extending the augmented Solow growth model to explain transitional economies. *Romanian Journal of Economic Forecasting*, *January 2014*, 65–76.
- 46. Prastiwi, I. E., & Anik, A. (2020). The Impact of Credit Diversification on Credit Risk and Performance of Indonesian Banks. *Global Review of Islamic Economics and Business*, 8(1), 013. https://doi.org/10.14421/grieb.2020.081-02
- 47. Quagliariello, M. (2007). Banks' Riskiness Over the Business Cycle: A Panel Analysis on Italian Intermediaries. Applied Financial Economics, 17(2), 119–138. https://doi.org/DOI: 10.2139/ssrn.935021
- 48. Rahman, S. A., Ahmad, N. H., & Taghizadeh, S. K. (2016). Entrepreneurial competencies of BoP entrepreneurs in Bangladesh to achieve business success. *Journal of General Management*, 42(1). https://doi.org/10.1177/030630701604200104
- 49. Rawat, P. B. (2017). A Conceptual Study of Trade Credit Management on SMEs. *Global Journal of Commerce & Management Perspective*, 6(4), 1–15. https://doi.org/10.24105/gjcmp.6.4.1701
- 50. Rinaldi, L., & Sanchis-Arellano, A. (2006). WO R K I N G PA P E R S E R I E S WHAT EXPLAINS AN EMPIRICAL ANALYSIS By Laura Rinaldi WO R K I N G PA P E R S E R I E S WHAT EXPLAINS AN EMPIRICAL ANALYSIS by Laura Rinaldi. 43.
- 51. Zeidan, R., Galil, K., Shapir, O. M. (2018). Do ultimate owners follow the pecking order theory? *The Quarterly Review of Economics and Finance*, 67, 45–50. https://doi.org/https://doi.org/10.1016/j.qref.2017.04.008
- 52. Bacha, S. & Azouzi, M. A. (2019). How gender and emotions bias the credit decision-making in banking firms. *Journal of Behavioral and Experimental Finance*, *22*, 183–191. https://doi.org/https://doi.org/10.1016/j.jbef.2019.03.004.
- 53. Salas, V., & Saurina, J. (2002). Credit Risk in Two Institutional Regimes: Spanish Commercial and Savings Banks. *Journal of Financial Services Research*, 22, 203–224. https://doi.org/https://doi.org/10.1023/ A:1019781109676
- 54. Sanchis-Arellano, R. . (2006). Household Debt Sustainability: What Explains Household Non-Performing Loans? An Empirical Analysis. *Working Paper Series*, *No.570*, 1–45.
- 55. Shehu, V., & Salihu, A. (2020). A Review of Algorithms for Credit Risk Analysis. *ENTRENOVA*-*ENTerprise REsearch InNOVAtion Conference, September*, 134–146.
- 56. Sheng, T. (2021). The effect of fintech on banks' credit provision to SMEs: Evidence from China. *Finance Research Letters*, *39*. https://doi.org/10.1016/j.frl.2020.101558
- 57. Smulowitz, S., Becerra, M., & Mayo, M. (2019). Racial diversity and its asymmetry within and across hierarchical levels: The effects on financial performance. *Human Relations*, *72*(10), 1671–1696. https://doi.org/10.1177/0018726718812602
- 58. Tian, Z., Xiao, J., Feng, H., & Wei, Y. (2020). Credit Risk Assessment based on Gradient Boosting Decision Tree. *Procedia Computer Science*, *174*, 150–160. https://doi.org/10.1016/j.procs.2020.06.070
- 59. Wu, X., & Wang, Z. (2005). Equity financing in a Myers-Majluf framework with private benefits of control. *Journal of Corporate Finance*, *11*(5), 915–945. https://doi.org/10.1016/j.jcorpfin.2004.04.001
- 60. Yacui Gao, L. Z. (2018). Research on Credit Risk Assessment of Small and Medium-Sized Enterprises in Commercial Banks. *Scientific Research An Academic Publisher*, *5*(11), 1–11. https://doi.org/doi: 10.4236/oalib.1105022.
- 61. Yergin, H., Mercan, M., & Erol, A. (2015). Assessment of Efficiency and Effectiveness of Micro Credit Application From Socio-Economic and Political Perspectives: The Case of Hakkari. *Procedia Economics and Finance*, *23*(October 2014), 176–179. https://doi.org/10.1016/s2212-5671(15)00405-0
- 62. Yu, L., Wang, S., Lai, K. K., & Zhou, L. (2008). Bio-inspired credit risk analysis: Computational intelligence with support vector machines. In *Bio-Inspired Credit Risk Analysis: Computational Intelligence with Support Vector Machines* (Issue 71473155). https://doi.org/10.1007/978-3-540-77803-5
- 63. Zhao Wang; Cuiqing Jiang; Huimin Zhao; Yong Ding. (2020). Mining Semantic Soft Factors for Credit Risk Evaluation in Peer-to-Peer Lending. *Journal of Management Information Systems*, 37(1), 282-308.
- 64. Zielinski, T. (2013). Merton's and KMV Models In Credit Risk Management. *Risk Perception in Financial and Non-Financial Entities*, 123–134.