The Impact of Credit Risk Interest Rate on Small and Medium Enterprises (SMES) Growth in Dili, Timor-Leste

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ABSTRACT

This study aims to analyze the impact of credit risk and interest rates on the growth of small and medium enterprises (SMEs) in Dili, Timor-Leste. This study used quantitative questionnaire-based method with a sample of 171 SMEs in Dili, Timor-Leste. Data analysis was conducted using multiple regressions with hypothesis test using t and f values. The results show a positive and significant relationship for credit risk and interest rate on SMEs growth in Dili, Timor-Leste. The result shows that when banks and financial institutions implement credit risk effectively, company growth is increased. On the other hand, the interest rate did not have any impact on the growth of the Small and Medium Enterprises (SMC). This may be because small and medium enterprises (SMEs) do not pay attention to the Bank interest rate when they ask for credit.

Keywords: Credit risk, interest rate, growth, SMEs

1. Introduction

Small and medium enterprises (SMEs) generate substantial employment and economic growth in many countries. In some countries, the SMEs contributed significantly (99%) to job creation (Majkova, 2016). However, the SMEs faces financial risks with credit risks. The credit risk is greater amongst youth entrepreneurs (Bottazzi et al., 2014; Lazányi, 2014, Dong and Men, 2014, Hernández-Covas no Martinez-Solano, 2010; Pickernell et al., 2011; Riding et al., 2012) due to limited financial resources and human resources. The credit risk has a significant impact on the growth of the business of the SMEs.

The growth of the SMEs is like the indicator that used to measure the progress and profitability of SMEs. The SMEs growth can be measure using financial and non-financial indicators. The financial indicator can be measure by the growth of returned on investment (ROI), returned on equity (ROE), returned on assets (ROA), and profitability (Alessandri & Drehmann, 2010). In the other hand, non-financial indicator can be measure by employment growth, investment, product sales, customers satisfaction, economy contributions, market share (OECD, 2017) The SMEs growth depend on other factors, such as credit risk and interest rate (Kasman, Vardar, & Tunç, 2011).

This research held in Dili, Timor-Leste because the majority of SMEs are located in this city. SMEs like a key pillar for the Timor-Leste economy because it is a sector that moves the economy, creates jobs, contributes to state income and generates income for families. Likewise, the growth of the Timor-Leste SMEs is likely dependent on politics and macroeconomic problems.

Political conditions are the main cause for the development of the company. Unfortunately, these conditions cannot attract investment in the SMEs. Timor-Leste's problems are similar to India and Slovakia. (Wolfbein,1967, Majkova, 2016 no Hamid, 2017). The problem of political impasse and the Covid 19 pandemic have caused the economic activity of Timor-Leste to be paralyzed, which affects the credit risk. Because of the incapacity of client to paid the credit interest. The high interest rate in formal institutions such as BNCTL (2020) is 14% for all companies and informal institutions such as KAEBUK 18% for micro enterprise in Timor-Leste (Kaebauk, 2020).

The Central Bank of Timor-Leste remains committed to strengthening the credit sector of the SMEs to help expand economic development. The problem of the Covid-19 pandemic that affects the world has caused the economy of Timor-Leste to become paralyzed. On the other hand, the Government has implemented a policy of economy recovery to support private enterprises to strengthen economic activity (Amaral, 2020).
Previous studies revealed some factors that affect the survival and growth of micro, small and medium enterprises, such as: minimum access to credit that provide by financial institutions, lack of financial knowledge and therefore no separation between family and business income, and no business training (Belo, 2019; Soares et al., 2014). In most of cases, companies had lack financial management practice such as debts, size and age. These problems may be considered a major challenge for SMEs.

2. Theoretical Frameworks

2.1. Credit Risk

The credit risk is a risk of not paying debts. (Rachman, 2019). Credit risk is part of comprehensive management and also part of the control system. (Spuchťáková, Valašková, & Adamko, 2015). The credit risk can be considered a major risk as it is linked to all business assets. The general bank responds to a risk management strategy that incorporates the principles of risk management processes including identification, monitoring and risk measurement. The credit risk is an integral part of the credit process in financial institutions, and some are clearly shown in the small and medium enterprises (SMEs) loan process (Corazza, Funari, & Gusso, 2016; Yahaya, Mansor, & Bakar, 2016; Plaki & Elefthou, 2014). The purpose of credit risk management is to maintain the efficiency of business activities. This risk occurs throughout the financial market, but most importantly in banks, mainly from all credit and balance activities, as guarantees. The credit risk also arises through the entry into derivative transactions, security loans, repurchase transactions and negotiations.

Credit risk management occurs when a bank fund is extended, committed, invested, or otherwise demonstrated through the actual contractual agreement or implicates, whether reflected in the balance sheet. According to Rachman (2019) the credit risk is the possibility of failing, so determining the risk is driven by foreign factors to the bank, such as the general level of unemployment, changing the socio-economic conditions, the attitude of the debtor and political issues. Rachman (2019) used indicators in his research such as Non-Performing Loans (NPL), Net Interest Margin (NIM) and Return on Assets (ROA). But in this research the size was adopted according to (Belo, 2019)

2.1.1 Non-Performance Loans

A non-performing loan (NPL) is a loan in which the borrower is in default and has not paid the monthly principal and interest repayments for a specified period. International Monetary Fund (IMF) define NPL is when debtors have not paid interest or principal payments in at least 90 days or more. Demirgüç-Kunt dan Maksimovic (2005) stated that payment for more debt is difficult for the SMEs to increase their growth.

2.1.2. Loans Size

The amount of credit is an important factor for a financial institution to see its credit risk but the credit risk occurs when the financial institution gives a long-term credit (loan size) (Belo, 2019).

2.2. Interest Rate

Interest rate is the amount of interest due per period, as a proportion of the amount lent, deposited, or borrowed (Sunariyah, 2013). The interest rate is the amount charged on top of the principal by a lender to a borrower for the use of assets. According to Majkova (2016), there is a dependency between the age and the ability to manage the risk of the interest rate, as well as between the age of entrepreneurs and the view that SMEs in other EU countries have better loan conditions, especially lower interest rates if compared to the BNCTL interest rate is 14% for people who seeking for credit.

The interest rate also means the price paid by a debtor to a client who holds money or the price paid by a client who borrows money from the bank. According to Kasmir (2004), the interest rate as the price of the loan can be said by a percentage, there are also products offered by the bank as actual account deposits where the bank also provides interest rates to the client using the product. According to Huang and Wang (2010), interest rates are one of the most typical functions used by the Government to regulate the supply of financial products, which have a significant impact on the financing of company and on the investment behavior. In other study (Majkova, 2016) used legal form, bank loan and income interest, and interest rate was adopted from Belo (2019).

The micro-credit institution was established in Timor-Leste with the aim of helping the growth of the SMEs, but the level of interest rate of each micro-credit institution is difficult to develop SMEs in Timor-Leste (Belo, 2019).

2.3. Growth

Growth is a key driver of wealth creation, employment and economic development in all countries around the world (Davidsson, Achtenhagen, & Naldi, 2010; Bosma, van Praag & De Wit, 2000). Davidsson et al. (2010) indicates that the growth of SMEs has slowed in the organisation and that growth...
is also linked to job creation, which is essential for the success of the economy. However, Welsch, Price and Stoica (2013) found that SMEs owners were usually more concerned about their lives more than SMEs growth. Levie and Autio (2013) highlighted that achieving this growth is difficult and requires effort, and if entrepreneurs do not want to start their business, their business will not have possibility to growth. These actors further classified the factors affecting the growth and growth intention of SMEs by individual, business and environment characteristics. Therefore, Menkhed, and Chay (2007) and Davidsson et al. (2010) because there is no growth in specific characteristics of entrepreneurs, because many SMEs are not interested in growth or deliberated not to pursue growth. Small and medium enterprises (SMEs) play an important role in the country’s economy, modern and social development. SMEs take an important part of the world economy, through its critical commitment to GDP and increasing the living standards of the population. Overall, developing countries in 90% of SMEs are part of a significant reason for financial development. The modern part of SMEs is considered an important part of the world economy through the fight against household goods for different countries. According to the United States International Commerce Commission (2012) the U.S. economy is growing in terms of the number of SMEs, which contributes half to 70% of the country's GDP through job creation and self-confidence. SMEs are considered an important method for job creation and poverty reduction in developed countries. The presence of SMEs brings the successful use of assets nearby and economic growth across the world. According to the Fourth All India Census of SMEs, 2006-2007, Govt. of India, New Delhi (2007), the sector of micro, small, medium-sized enterprises contributed significantly to the production, employment and export of the country. This sector is estimated to employ 59 million people about 26 million units’ houses across the country.

Muneer et al. (2017) defines small and medium-sized enterprises under the State Bank of Pakistan as an organization not registered in the stock exchange and the number of employees is less than five hundred for manufacturing and fifty for commerce or service organizations. The study of small and medium-sized enterprises in Kenya defined SMEs as a business with over 250 employees. In Canada and the United States of America the average company is defined as a company with a number of workers less than 500 and the small company refer to a company with a maximum number of employees 100. Conroy (2006) said that the micro, small and medium-sized enterprises in Timor-Leste refer to the enterprises whose number of workers is at least five (Belo, 2019). In other studies, such as Nhenge & Ringer (2017) used sales volume, asset growth, profit to measure business growth. However, this research indicator adopted from (Belo, 2019) such as an age, size and debt to measure the SMEs growth.

2.3.1. Age

Age is an important factor to control company, investments and resources that will be productive to manage SMEs, based on previous research shows that age has a negative impact on SMEs growth (Belo, 2019).

2.3.2. Size

According to the European Union, it is possible to classify companies into three different categories of dimension. Firstly, micro-enterprise is the one with fewer than 10 employees and an annual turnover (total annual balance sheet) less than 2 million euros. Secondly, the small enterprise is defined as a firm with fewer than 50 employees and an annual turnover (total balance sheet) less than 10 million euros. Lastly, the medium enterprise is a firm with less than 250 employees and an annual turnover of less than 50 million euros and annual balance sheet total less than 43 million euros (Belo, 2019). Therefore, size is an important to financial institution to give the credit in order to increase SMEs growth.

2.3.3. Debt

Debt is an important factor that financial institutions should consider, before giving credit to clients, According to Maria (2004) as cited in Belo (2019) pointed out that the concept of microcredit is associated with the lender (give credit) and that the concept of microenterprise is associated with the debtor (receiving credit).

3. Hypothesis

The hypothesis is simply an explanation of the phenomenon being studied that is supported by data. To respond the research questions the results can be obtained through the collecting data. Based on this Thus, the researchers set the following hypothesis.

3.1. Credit Risk on the SMEs Growth

In both developing and developed countries, the vast majority of firms are SMEs. For example, approximately 97% of firms in Mexico and Thailand are SMEs (Kantis, 2004; Simmons, 2004). In the United States, over 96% of businesses similarly have fewer than 50 employees (Nichter and Goldmark,
According to Barnhill and Maxwell (2002) the objective is to measure credit and market risks for the entire bank portfolio. They developed a simulation framework to evaluate assets and responsibilities dependent on the state through a range of systematic risk factors. Based on the arguments above, the following hypothesis is formulated:

H1: Credit Risk has positive and significant impact on the Small and Medium Enterprises (SMEs) in Dili, Timor-Leste.

3.2. Interest Rates on SMEs Growth

Interest rate is important for small and medium enterprises (SMEs) in Timor-Leste, interest rates at the BNCTL bank is 14% for debtors making credit. BNCTL’s mission is to support job creation and contribute to the poverty reduction. Cooper (2012) concluded that microfinance services have a positive impact on the growth of SMEs with the highest rate of interest in each financial institution. Based on the arguments above, the following hypothesis is formulated:

H2: Interest Rates has positive and significant impact on the Small and Medium Enterprises (SMEs) in Dili, Timor-Leste.

3.3. The Impact of Credit Risk and Interest rates on the Small and Medium Enterprises (SMEs) in Dili, Timor-Leste.

According to the Duffie and Singleton credit risk models (2003) and interest rates risk (Hull, 2008) affect the bank portfolio, there are other similar studies Cooper (2012) concluded that microfinance services have a positive impact on the growth of SMEs. Based on the arguments above, the following hypothesis is formulated:

H3: There are positive and significant relationship between credit risk and interest rates on the the Small and Medium Enterprises (SMEs) in Dili, Timor-Leste.

4. Research Methods

This study used quantitative methods to test the relation between the variables credit risk and interest rates on the SMEs growth. Therefore this study used empirical study Schmidt et al. (2013) to explain the variables credit risk and interest rates on the SMEs growth in Dili. 48,100 SMEs in Dili (Godinho, 2013) were considered as the analysis unit for this research, while data collection was done by using the questionnaire.

To test validity and reliability of the model, SMART-PLS 3.0 was used following the rules recommended by Hair et al. (2014). SMART-PLS can be used to analyse the multivariate relationship, small sample number (minimum 30), reflective/formative indicators, no need to use the normality and data collinearity test (Abdillah et al., 2015) and can be tested simultaneously (Saldanha, 2019).

5. Results

5.1. Reliability and Validity

To test the reliability of the measurement model, composite reliability (CR) and Cronbach’s Alpha (CA) values are used to ensure the reliability of the measurement model using Algorithm SMART-PLS 3.0. Table I shows that the CR and CA values of all items exceed the threshold point of 0.7 (Hair et al., 2017), therefore, all items can be used to test the inner mode.

In general, there are two types of validity tests, namely convergent validity and discriminant validity. Convergent validity is measured by outer loading (OL) or indicator loading, and average variance extracted (AVE). AVE and OL values of all items should be above the threshold values of 0.5 and 0.7 respectively to demonstrate an acceptable degree of convergent validity (Hair et al., 2017).

Table 1. CA, CR for Reliability and AVE for Convergent Validity Test

<table>
<thead>
<tr>
<th></th>
<th>Cronbach's Alpha</th>
<th>Composite Reliability</th>
<th>Average Variance Extracted (AVE)</th>
</tr>
</thead>
<tbody>
<tr>
<td>CR</td>
<td>0.976</td>
<td>0.981</td>
<td>0.913</td>
</tr>
<tr>
<td>G</td>
<td>0.950</td>
<td>0.964</td>
<td>0.869</td>
</tr>
<tr>
<td>IR</td>
<td>0.964</td>
<td>0.973</td>
<td>0.902</td>
</tr>
</tbody>
</table>
To assess the discriminant validity between constructs, we used Fornell-Larcker criterion. This method states that the construct shares more variance with its indicators than with any other construct. To test this requirement, the AVE of each construct should be higher than the highest squared correlation with any other construct (Hair et al., 2014). Table 2 shows that the values of AVE of each construct represented by bold numbers is higher than the highest squared correlation with any other construct as recommended by Hair et al. (2014), therefore, all constructs are valid measured based on the Fornell-Larcker criterion.

Discriminant validity was also measured by using Heterotrait-Monotrait (HTMT) with the threshold values of all items below the threshold point of 0.85 (Henseler et al., 2015). Table 5.2 shows that HTMT values of all items are below the maximum point of 0.90, therefore, this model is valid based on discriminant validity (HTMT.85). Therefore, all these items are valid.

The reliability test can used two parameters: Cronbach Alpha (CA) and Composite Reliability (CR). An item is reliable when the value of CA and CR is higher than 0.7. Table 5.3 shows that the value of CA and CR items is 0.7 as recommended by hair et al. (2017) So these items can be used to test the internal model.

![Figure 1. Outer Loading for Convergent Validity](image)

Table 2. Fornell-Larcker Criterion for Discriminant Validity

<table>
<thead>
<tr>
<th>Item</th>
<th>CR</th>
<th>G</th>
<th>IR</th>
</tr>
</thead>
<tbody>
<tr>
<td>CR</td>
<td>0.956</td>
<td></td>
<td></td>
</tr>
<tr>
<td>G</td>
<td>0.847</td>
<td>0.932</td>
<td></td>
</tr>
<tr>
<td>IR</td>
<td>0.950</td>
<td>0.831</td>
<td>0.950</td>
</tr>
</tbody>
</table>

Table 3. Heterotrait-Monotrait for Discriminant Validity

<table>
<thead>
<tr>
<th>Item</th>
<th>CR</th>
<th>G</th>
<th>IR</th>
</tr>
</thead>
<tbody>
<tr>
<td>CR</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>G</td>
<td>0.879</td>
<td></td>
<td></td>
</tr>
<tr>
<td>IR</td>
<td>0.890</td>
<td>0.868</td>
<td></td>
</tr>
</tbody>
</table>
Table 4. CA, CR for Reliability and AVE for Convergent Validity Test.

<table>
<thead>
<tr>
<th></th>
<th>Cronbach's Alpha</th>
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<th>Average Variance Extracted (AVE)</th>
</tr>
</thead>
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</tr>
<tr>
<td>G</td>
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</tr>
<tr>
<td>IR</td>
<td>0.964</td>
<td>0.973</td>
<td>0.902</td>
</tr>
</tbody>
</table>

5.2. Hypothesis Test

Table 5.5 presents the results of path coefficient test for the overall sample to examine hypotheses H1, H2 and H3 using SMART-PLS 3.0. The hypothesis test usually uses values T and P in the path coefficient. One variable significantly influences the other variable when the value T is greater than 1.96 and the value P is lower than 0.05. Accordingly, the relationship between credit risk (CR) on SMEs growth (G), the T value (3.717) and P value (0.000), in which the T value is higher than threshold value of 1.96, and the P value is lower than the maximum allowable value of 0.05 (Table 5.5) as recommended by Hair et al. (2014) and Hair et al. (2017). Therefore, hypothesis one (H1) is accepted. The relationship between interest rates (IR) on SMEs growth (G), using the T value (0.733) and P value (0.464) is shown below (Table 5.5). This shows that the T value lower the minimum threshold value of 1.96 and the P value greater than the maximum threshold value of 0.05, means that interest rates (IR) has no significant effect on SMEs (G) in Dili Timor-Leste.

Table 5. T and P Values for Hypothesis Test

| Relationship | Original Sample (O) | Sample Mean (M) | Standard Deviation (STDEV) | T Statistics (|O/STDEV|) | P Values | Note       |
|--------------|---------------------|-----------------|---------------------------|-----------------------|----------|------------|
| CR -> G      | 0.693               | 0.690           | 0.187                     | 3.717                 | 0.000    | Significant|
| IR -> G      | 0.158               | 0.163           | 0.215                     | 0.733                 | 0.464    | Not Significant|

6. Discussion

The purpose of this research to first test and analyses the impact of variable credit risk on the growth of SMEs in Dili Timor-Leste. The credit risk is measured through two dimensions: Non-Performance loans and Loans size, credit risk measured by character indicators, capital, collateral, conditions and capacity on the growth of small and medium enterprises (SMEs). These indicators show that the value of all items of the OL and AVE is 0.7 and 0.5 respectively. Thus, all items are valid according to the recommendation Hair et al. (2014). The influence test showed that the value of T (3.717) was higher than 1.96, and the value of P (0.000) was lower than 0.05. This shows that credit risks have a positive and significant influence on the growth of small and medium-sized enterprises (SMEs) in Dili Timor-Leste. Research findings show that credit risk has positive and significant on the growth of small and medium-sized enterprises (SMEs) in Dili Timor-Leste.

Growth of small and medium enterprises (SMEs) is an important factor to measure the success of small and medium enterprises, which should increase its growth. The research was carried out on companies that get credit from banks and financial institutions, seeking for the answers to the problems, so the authors conducted a survey of 171 respondents, 98 men and 73 women. According to Rachman, Mohd Audi & Sinaga (2019) previous study found that credit risk has a positive and significant on the SMEs growth. In his objective, the indicator that used by (Rachman,2019) such as Non-Performing Loans (NPL), Net interest Margin (NIM) and Return on Assets (ROA). But in this research the indicator is adopted from the previous study (Belo, 2019). Theoretically, considering the use of credit risks to have a positive or acceptable contribution, this research shows that credit risk in Timor-Leste are a good contribution to the growth of SMEs.

The hypothesis H2 the results of this research show that the indicator income rate and its interest
rate indicator, tax satisfying, small and medium-sized SMEs growth rate problems in Dili, Timor-Leste showed that the value of the OL and AVE items was above 0.7 and 0.5 respectively. Thus, all items are valid according to the recommendation Hair et al. (2014). Based on the interest rates (IR) influence test on growth (G), the result of the SMART-PLS 3.1 test showed that the value of T (0.733) was below 1.96, and the value of P (0.464) was above 0.05. So the IR has positive but not significant on the SMEs growth (G). Therefore, Hypothesis 2 (H2) is rejected. In other studies (Majkova, 2016), using the legal form, bank loans and income tax rates. But in this study the indicator is adopted based on (Belo, 2019) such as level of interest rates. Small and medium-sized enterprises (SMEs) growth is the best way to meet accountability and the quantity to increase their growth in Timor-Leste. From the previous explanation shows that the interest rate does not affect the growth of small and medium enterprises (SMEs) and also concludes that the growth of small and medium enterprises (SMEs) is the company contributing to the development of the economy of Timor-Leste (Wolfbein,1967; Majkova, 2016; Hamid, 2017).

The Hypothesis 3 (H3) show the positive relationship between the credit risk and interest rates. From the result show that value R² is 0.718 or 71.8%. Therefore, the model has accurate predict capacity equivalent to 78.1% which is can categorized as strong. The credit risk and interest rates relating to the ability of debtors to pay back their debts, the research is sensitive to the impact of the credit risk and interest rates. The relationship between the credit risk and interest rates investigated by Rachman, Mohd Saudi & Sinaga (2019). This result also show that credit risk are also addressed by both banks and debtors (Säkti, 2017).

Finally, the conclusion, the research explored the relationship between credit risk and interest rates on the growth of SMEs. The result show that the positive impact of the credit risk the is more dominant influence compared to the interest rates. Although the research has provided relevant and interesting perceptions of the credit risk and the interest rate on the SMEs growth.

7. Conclusions and Implications

From the research findings that the authors have obtained and analyzed, credit risk measured by the character, capital, collateral, conditions, capacity and interest rates indicators are tax satisfaction, the growth rate problem of SMEs in Dili, Timor-Leste, can make the following conclusions:

a) There is positive and significant impact between the credit risk and SMEs growth in Dili Timor-Leste, as result of probability of t Test value is lower than the level of significance (0.05)

b) There is positive but not significant impact between interest rates and SMEs growth in Dili Timor-Leste, as result of probability of t Test is greater than level of significance (0.05).

c) There are impact of credit risk and interest rate on the SMEs growth in Dili Timor-Leste with the simultaneous value that show the accurate predict capacity equivalent is strong.

8. Limitation and Future Research

Authors recognized this research on the impact of credit risk and interest rates on the growth of small and medium enterprises (SMES) in Dili, Timor-Leste still have some limitation such as:

a) Questionnaire which distributed by the authors are collected on time because the respondents have their time to answered and also there are some Small and Medium enterprises that closed due to Pandemic Covid-19. Therefore, for future research, we recommend to use another instrument to gathering data like to unseen-depth interviews, focus group discussions and direct observation to validate responses from SMEs to minimize the data bias. Therefore, future research needs to be undertaken in other types of industries such as the construction industry, banking, commercial industries, and the manufacturing industry in Timor-Leste and other countries to allow better generalization across industries.

b) This research focused only on small and medium-sized enterprises in Dili. However, there are other micro companies such as culinary, restaurants, and others. Therefore, future research needs to be undertaken in other districts to allow better generalization across industries.

c) In this research the authors used only primary data so they did not show the real situation of SMEs growth. Therefore, future research needs to use secondary data of SMEs in Timor-Leste to allow better generalization across industries.
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