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The Small Medium-Sized Enterprise's Characteristic in Batam Free Trade Zone that Able to Acquire Debt

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Abstract

The objective of this research is to identify Small Medium-sized Enterprise (SME) Characteristics in Batam Free Trade Zone that have the ability to acquire debt. Sampling method used in this research is purposive sampling method. 79 selected samples were taken from SME that located in Batam during 2008-2009. The methods used for analysis were comparison analysis and logistic regression model. The result of this research indicates that firm size, firm growth, firm location, foreign shareholder involvement, type of industry, export activities, and educational background of top manager at SME in Batam have significant correlations to the SME's ability to acquire a debt. The ability to acquire debt by SME in Batam is positively related to location, export activities and manager education but negatively related to size, growth, foreign shareholder and type of industry. The firm age and development strategy seems to have no significant impact on the SME's ability to acquire debt. The groups which are SME's using debt and not using debt can be distinguished by Mean Difference Analysis for independent samples. Based on the analysis, we concluded that firm location, export activities, background educational, foreign shareholder and firm size were the differentiating factors between two groups.

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***Keywords*: Small Medium-sized Enterprises (SME), acquire debt, debt financing, Batam Free Trade Zone**

1. Introduction

The Batam Free Trade Zone has been conceived as one part of a larger strategic development initiative by the Indonesian Government. It has roles to promote regional economic development for attracting foreign

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direct investment and stimulate export-oriented industrial developments. By providing special regulatory frameworks and investment incentives to targeted sub-regions of the country, Batam was expected to become one of prospective areas not only for large-scaled industry and business enterprises but also for the small medium-sized enterprises (SMEs) that have been operating in Batam and had a big contribution to the total number of workforce in Batam. According to Batam Industrial Development Authority (BIDA) report in 2008, the total number of SME in Batam during the last ten years attained 9,900 unit with at least 60,000 employees. There are a lot of opportunities for SMEs, due to its strategic role as supporting industry for big and multinational business in Batam.

However, despite the important role of SMES in economic growth and employment creation, they commonly constrained by finance when they tried to expand their business. According to Zhao, Wu and Chen (2006), the most important obstacle to get bank financing is information asymmetry between borrower and lender, e.g., the borrower has private information about the firm that lender doesn't have. Moreover, for SMEs, because of their small size, short history, obscure accounting, etc, the extent of information asymmetry becomes more serious.

To solve the financing problem that arises, it is necessary to find out the key measurements that could be used as indicators that will reduce degree of information asymmetry. Specifically, conveying the intrinsic soundness of SME project and distinguishing them from riskier borrower. Those elements signalling SME's quality and alleviating informational problem undoubtedly become important factors affecting SME's ability to acquire financial support from bank. Nevertheless, many literatures have discussed the financing aspects of SMEs at home and abroad. But many of them mainly focused on sources of capital, capital structure and similar topics, and only few of them investigated SMEs' ability to acquire debt from lender institution such as Bank, financing company or venture capital. Therefore, based on both points of view, the objective of this research study is to identify and explore how firm characteristics affect SME's ability to acquire debt in Batam Free Trade Zone. After the factors known, it could be one of parameter by lender to assess borrower ability to acquire debt. This research also identified what are the differentiating factors between groups of SME those get loan or debt and for those who didn't.

The remainder of this paper is organized as follows. Section 2 presents related literature review and empirical hypotheses. Section 3 introduces data source and methodology, Section 4 presents result analysis, Section 5 draws a conclusion and point out our future research direction.

2. Literature Review and Proposition Development

A first question in all Small Medium Sized Enterprises (SMEs) literature is the definition of what is really considered as a small & medium scaled business. In Indonesia, there are some terms to define the Small Medium Sized Enterprises. They are mostly from related government institution such as Ministry of Cooperative and SME, Ministry of Finance, Central Bureau of Statistic, etc. The definition of SME that used in this research refers to Central Bureau of Statistic that categorized based on the number of paid employee. Small firms have less than 20 employees and medium sized firm have 20-100 employees. The definition is almost same with Van der Wijst (1989) that considers small and medium–sized business as privately held firms with 1–9 and 10–99 people employed.

A few empirical studies have been performed specifically to analyze the factors affect SME's ability to acquire debt and related determinants of capital structure. Bebczuk (2004) conducted SME financing research through Logistic Model Analysis at SME in Argentina. He found that profitability, debt ratio, the use of overdraft credit increases probability to obtain the loan from bank, meanwhile size, liquidity, tangibility, expectation of higher investment, expectation of export growth and length of lending relationship that tested, seems have no correlation significantly. Zhao, Wu and Chen (2006) revealed the different result at SME in China. They found size factor, close relationship with bank, internal funds, willingness to accept bank's clauses

and collateral have positive significant correlation. Meanwhile, financial factors like profitability and debt ratio have not clear affect to SMEs ability of obtaining loan from bank.

Beside two studies above, there are many researches related to determinants of leverage or capital structure that allow us to interpret the determinant as a key factor of access to credit. Vigren (2009), Abor and Bieke (2007), Nguyen and Ramachandran (2006), Weill (2001), etc, are several researchers that reveal the various factors determining leverage or capital structure. Generally, there are still no similar conclusions about the factors showed. From a number of studies about the factors and according to availability of data, some of the determinants used to build the estimation model of this research. The determinants that uses are: size, age, growth, foreign ownership, location, type of company, export, education manager, and development strategy whereas the SME ability to acquire debt measure by SME probability getting loan or debt. The higher probability getting debt means the higher ability to acquire debt.

Size seems to be the most significant factor for access to financing, especially long term debt (Esperanca et al. 2003). Because of the fixed transaction costs of securing long term debt, smaller firms would have problems raising long term debt and thereby firms prefer short term debt (Hall et al. 2004). The positive relationship with size and debt rate supports the existence of asymmetric information, because small firms more likely run into the agency problems between owners and potential lenders (Nguyen & Ramachandran 2006). Sogorb-Mira (2005) found that the size is positively related to debt not only for large firms but also for smaller firms. The positive connection was also found by Abor and Bieke (2007). Based on the previous empirical researches, the proposition 1 that would be tested at SME in Batam is "The larger the sizes of SMEs, the higher probability SMEs to acquire a debt".

Chittenden et al. (1996) found that younger and more rapidly growing firms have higher levels of long term debt. Hall et al. (2000) and Abor & Bieke (2007) found in their study of SMEs that growth is positively related to the short term debt ratio. Michaelas et al. (1999) propound a positive relationship between debt and growth opportunities because SMEs mainly use short term financing. Both Michaelas et al.(1999) and Sogorb-Mira (2005) confirmed that a firm with more growth options has also more debt, both short and long term. It is suggested that the growth opportunities have a positive relation to the debt ratio. Based on the above empirical researches results, the proposition 2 that would be tested at SME in Batam is "The higher of firm growth, the higher probability SMEs to acquire a debt".

Age of the firm is used as a standard measure of reputation in the several capital structure models. The reputation proofs the firm's ability to meet the obligations on time. Older firms are more reliable and they have more long term debt. (Abor & Bieke, 2007). Hall et al. (2004) in Vigren 2009 regarded that new firms have not have time to retain cash flow and they are forced to borrow, so the age should be negatively related to the proportion of debt. However he found that the age of a firm has a positive connection to long term debt but a negative connection to short term debt. The same result was concluded by Abor and Bieke (2007). From the point of view of lender, age of the firm commonly used as proxy to measure the firm's experience running their business and it could be use to asses firm credit feasibility by lender. Based on the condition, the proposition 3 that proposed at SME in Batam is "Firm age has positive correlation to SME ability to acquire debt" or in other words is "The Older SME has higher probability to acquire debt than the younger SME".

Ownership factor related to foreign shareholder presumable affects the decision of capital structure choices. Sun and Tong (2003), Wei et al. (2003), and Bai et al. (2004) shown that issuing shares to foreign investors is associated with higher market valuation and better firm performance. Cull and Xu (2005) find that the share of private ownership has a positive effect on profit reinvestment rates. Li, Yue Zhao (2007) in their study also found that foreign ownership is negatively associated with all measures of leverage. Based on the several of empirical researches results above, the proposition 4 that would be tested at SME in Batam is " Foreign Shareholder has negative correlation to SME ability to acquire debt", or in other words is " the SME that involve foreign shareholder has lower probability to acquire debt than the pure local SME.

Hall et al. (2004) in Vigren (2009) studied the capital structure of European SMEs and noticed there are

some regional differences between the capital structure and debt ratio determinants. The distinctions between countries can be explained by differences in attitudes to the borrowing, disclosure requirements, and relationships with banks, taxation and other national economic, social and cultural differences. These are related to the different levels of information asymmetry, signalling and agency costs between countries. Russo and Rossi (2001) investigated how the location of a firm in an industrial district affects its ability to resort external financing. They found that the firm located inside the industrial district has an advantage in the financial relations with the banking system. The firms in the industrial district have higher leverage ratios due to the lower costs of credit and less financial constraints. This study, it is examine whether the SME that located within industrial or business park, have higher or lower probability of getting debt financing compared to the outside of the park. On the other hand the financier might consider these regions as a better operational. So the proposition number 5 is "The SME that located within industrial or Businesses Park, has the higher probability to acquire a debt than the SME that located outside industrial or business park ".

Variations due to industry effects are likely to be more pronounced for SMEs since most of them are "unitary firms" (Bolton, 1971) and this could have an impact on their capital structure. Service businesses, for example, are less likely to be candidates for bank loans because they often lack assets that can be used as collateral (Hisrich, 1989; Riding et al., 1994). Correspondingly, businesses those are highly of capital intensive such as manufacturing, transportation and construction, may be more likely to use external capital. Bradley et al. (1984) found that industry classification accounted for 25% of the variation in firm leverage, with capital intensive firms showing significantly higher leverage ratios. Based on the several of empirical researches results above, the proposition 6 that would be tested at SME in Batam is "Type of industry has positive correlation to SME ability to acquire debt where manufacture SME has higher probability to acquire debt than non-manufacture SME".

The international diversification reduces the expected cost of bankruptcy and allows for increased debt capacity. Firms involved in export business tend to be more diversified and as such are capable of accommodating more debt capital (Abor, 2004), implying that debt ratio rises with increasing international activities. Thus, as firms engage more in international business (exporting), they tend to employ more debt. The firm's export performance may convey valuable information to the bank: in the first place, it reveals the degree of competitiveness in usually aggressive markets; in the second place, it is an indicator of productive diversification against domestic shocks. In sum, the probability of default is likely to be lower for this segment of firms, provided the bank trusts or confirms the firm's expectation. Based on the several of empirical researches results above, the proposition 7 that would be tested at SME in Batam is "The SMEs engage in export activity has positive correlation to SME ability to acquire debt."

The educational background of the entrepreneur is believed to be positively related to debt, implying that better educated owners do have greater possibilities of borrowing. Better educated owners would find it easier to present a plausible case for a loan to an external party. This would be particularly important if the owner had no book-keeping knowledge. Overall, the level of education appears to have an important positive impact on micro and small enterprises' debt-raising capacities (Green, Kimuyu, Manos and Murinde, 2002). So, the proposition 8 that would be tested at SME in Batam is "The Educational Background of manager has positive correlation to SME ability to acquire debt or manager that graduated from degree program have higher probability to acquire debt than manager that graduated from below degree program (diploma and High school)".

The factor of existence of Business Development Strategy would consider to be included in this model. Since the SME has development planning and strategy, SME would require more funding so that it could generate funding from external parties. So the last proposition that would be tested as SME in Batam "Development Strategy Existence has positive correlation to SME Ability to acquire debt "

3. Data and Methodology

The Data used in this research were collected from result of questionnaire of Joint Research Competitiveness of Batam, Bintan, Karimun (BBK) that carried out in July until December 2009. Unit of analysis is sample of companies as respondent of the Joint Research that meet the SME criteria which is a total number of employee less than 100 employees. The total data sample of companies consist 79 companies. Type of data format comprises nominal, ordinal and interval data with cross-sectional data. The models in this study are estimated using Mean Difference Test Method and Logistic Regression Analysis.

Mean Difference Test is used to compare between groups of SME acquiring debt and SME not acquiring debt based on the characteristic of SME. The Logistic Regression Analysis is used to identify affect of SME characteristic that able to acquire debt. In logistic model analysis, the dependent variable is debt financing. The explanatory variables or independent variables to be used are the following: firm size, firm growth, firm age, foreign shareholder, location, firm type, export, level of educational background and development strategy. Both of models tested with SPSS Application Program.

The formula of Logistic Regression Model is as followings:

$$D_i = \alpha + \beta_1 SIZE_i + \beta_2 GROWTH_i + \beta_3 AGE_i + \beta_4 FORSH_i + \beta_5 LOCT_i + \beta_6 TYPE_i + \beta_7 EXPORT_i + \beta_8 EDU_i + \beta_9 STRAT_i + \varepsilon_i \quad (1)$$
$$i = 1, 2, 3$$

The variables to be used are the following:

- D_i represents a debt financing status. It is dummy variable; the firms getting debt financing are assigned a value of 1 and 0 otherwise.
- $SIZE_i$ represent firm size variable of total samples. It is measured through a dummy variable, taking the value 1 if the firm declares latest sales revenue less than IDR 10 billion and the value 2 if the sales revenue of firm in latest financial year is IDR 10 Billion above.
- $GROWTH_i$ corresponds to estimated revenue growth rate of SME (average % per annum) over last 2-3 years.
- AGE_i represents natural logarithm years of firm established
- $FORSH_i$ represents type of ownership firm for the establishment in Batam, whether involving foreign shareholder or pure local owned company. It is measured through dummy variable, taking the value 1 if the firm ownership has foreign shareholder and 0 otherwise.
- $LOCT_i$ represent location of firm whether located within industrial/business park or not. It is measured through dummy variable, taking the value 1 if the firm location within industrial/business park and 0 otherwise.
- $TYPE_i$ represent type of company that measured through dummy variable. Taking the value 1 if the type is manufacturing company and value 0 if non manufacturing company.
- $EXPORT_i$ represent firm existence in export activities. It is measured through dummy variable, taking the value 1 if the firm is conduct export activities and value 0 otherwise.
- EDU_i represent educational background of manager or entrepreneur. It is measured through dummy variable, taking the value 1 if the manager is graduate at least from degree program and value 0 if manager is graduate below the degree program
- $STRAT_i$ represent firm's development strategy for next year. It is measured through dummy variable, taking the value 1 if the firm declares they have development strategy for next years and value 0 otherwise

4. Result Analysis

4.1. Descriptive Summary

Table 1 provide the descriptive statistics of all variables used with various types of data samples. SME acquired a debt in this research about 43% or less than didn't acquire debt about 57%. Two of ten factors, firm growth and firm age are metric data, meanwhile the rest of eight factors are categorical data.

Table 1. Descriptive Statistic Summary

		DEBT	SIZE	GROWTH	AGE	FORSH	TYPE	LOCT	EXPORT	EDU	STRAT
N	Valid	79	79	79	79	79	79	79	79	79	79
	Missing	0	0	0	0	0	0	0	0	0	0
Mean		.43	1.33	.2013	2.0222	.46	.41	.47	.51	.73	.62
Std. Error of Mean		.056	.053	.01487	.06627	.056	.056	.057	.057	.050	.055
Median		.00	1.00	.2000	2.0800	.00	.00	.00	1.00	1.00	1.00
Mode		0	1	.10	2.20	0	0	0	1	1	1
Std. Deviation		.498	.473	.13217	.58903	.501	.494	.502	.503	.445	.488
Variance		.248	.224	.01747	.34696	.251	.244	.252	.253	.198	.239
Skewness		.287	.741	.957	-.559	.181	.394	.129	-.026	-1.081	-.505
Std. Error of Skewness		.271	.271	.271	.271	.271	.271	.271	.271	.271	.271
Kurtosis		-1.968	-1.489	.545	.107	-2.019	-1.893	-2.035	-2.052	-.854	-1.791
Std. Error of Kurtosis		.535	.535	.535	.535	.535	.535	.535	.535	.535	.535
Range		1	1	.59	2.53	1	1	1	1	1	1
Minimum		0	1	.01	.69	0	0	0	0	0	0
Maximum		1	2	.60	3.22	1	1	1	1	1	1
Sum		34	105	15.90	159.75	36	32	37	40	58	49

The mean of growth rate is approximately about 20.13%. It means that SME in Batam has good prospect. The mean of firm age logarithmic natural is about 2.02. It is same as 7.55 years. That means sample of SMEs have experience in their business. Beside the two factors, the other factors are categorical data that only have two values. Therefore their means value depend on frequency from each category. Based on eight factors, the number of sample of firm show that 67% number of SME have latest revenue below IDR 10 billions, 46% SME are not involving foreign shareholder, 41% type of firms are in manufacturing sectors, 47% firm located in outside of industrial/business park, 51% firms already conduct the export activities, 73% leader or manager of firms graduate at least from degree program and 62% firm declare they have development strategy for next year.

4.2. Mean Difference Test Result

Since whole the sample data were not followed by normal distribution, the statistical analysis tools will used is nonparametric approach. Based on Result of Mann-Whitney U Test and Chi Square Test for all factors, it was found that firm size, foreign shareholder, firm location and export activities significantly could be differentiating factors between groups of SME that able to acquire debt and unable to acquire debt. Meanwhile, it is not enough evidence to reject null hypotheses for the firm growth, firm age, firm type and development strategy. Therefore, it has no significant relation to differentiate SME groups that able to acquire debt and unable to acquire debt

4.3. Regression Result

All nine explanatory variables were included in the model. The Model ot the test uses Maximum Likelihood Method and Enter Analysis. The model fit is acceptable χ^2 (9) = 2.674, *Sig* = 0.953, which indicates p-value greater than level of significance (> 0.05) so that the model predicts values not significantly different from what it observed, implying that were model's estimates fit the data at an acceptable level. The overall Model (with all predictors & the constant) also correctly classified with 86.1% accurate which is excellent.

Table 2.Parameter Coefficient Test Result in Regression Model

Variables in the Equation

								95.0% C.I. for EXP(B)	
		B	S.E.	Wald	df	Sig.	Exp(B)	Lower	Upper
Step 1[a]	SIZE(1)	-3.933	1.258	9.767	1	.002	.020	.002	.231
	GROWTH	-7.502	3.601	4.339	1	.037	.001	.000	.642
	AGE	.365	.750	.236	1	.627	1.440	.331	6.269
	FORSH(1)	-2.305	.925	6.204	1	.013	.100	.016	.612
	TYPE(1)	-2.195	1.113	3.890	1	.049	.111	.013	.986
	LOCT(1)	2.625	1.098	5.717	1	.017	13.805	1.605	118.710
	EXPORT(1)	2.886	1.072	7.248	1	.007	17.927	2.192	146.593
	EDU(1)	3.120	1.082	8.316	1	.004	22.638	2.716	188.656
	STRAT(1)	.251	.731	.118	1	.732	1.285	.307	5.387
	Constant	-1.717	2.225	.596	1	.440	.180		

a. Variable(s) entered on step 1: SIZE, GROWTH, AGE, FORSH, TYPE, LOCT, EXPORT, EDU, STRAT.

In accordance with the variable in equation table in table 2 above, it is found that the estimated coefficients of several of the parameters were significant. Seven explanatory variables, *Firm Size* (*SIZE*), *Firm growth* (*GROWTH*), *Foreign Shareholder* (FORSH), *Type* of *Industry* (*TYPE*), *Firm Location* (LOCT), *Firm Export* (*EXPORT*) and *Top Manager Education* (EDU), were statistically significant at the 0.05 level while the two other variables, STRAT and AGE, were not statistically significant.

The SIZE coefficient is negative and statistically significant. It is suggested that SME with revenue below 10 billion significantly higher probability of debt acquiring than SME with revenue above 10 billion. In other word, the greater the SIZE, the lower probability for SME acquires debt. This finding is not like as expected at first proposition, and not in line with previously empirical research by Setiawan (2002), Frank & Goyal (2003), Sogorb-Mira(2005), Abor and Bieke (2007). But, this result supports an existence of Pecking Order Theory at SME in Batam. The SMEs intend to have preference for, first, internal equity and second for debt financing.

The statistically significant negative relationship between GROWTH and SME Probability to acquire debt is also difference with the second proposition and indicates the higher SME growth rate, the smaller probability for SME acquire debt. This finding is not consistent with previous research by Michaelas et al.(1999) and Sogorb-Mira (2005), but in line with the olderly previous research by Myers (1977) when he studied effect of growth toward debt financing and found evidence that the higher growth tend to be have lower leverage. This finding also suggests the pecking order theory phenomenon at SME in Batam

The sign on the AGE coefficient is positive like as expected in the third proposition, but the factor has no significant relation to the probability of SME acquires Debt. It could be explained that the sample of SME in this research has the average of age about 7-8 years, so that maybe the most SMEs already had enough internally funding to support their business. But empirically, through this research, there is no strong evidence to figure out the relationship between firm ages with SME probability to acquire debt. In terms of foreign shareholder involvement (FORSH), the results indicate a statistically significant and negative association between foreign shareholder and SME probability to acquire debt. It means that SME without foreign shareholder involvement or pure local SME significantly higher probability than SME with foreign shareholder

involvement to acquire debt. The finding is the same as the fourth proposition. It also confirmed past studies by Li, Yue, Zhao (2007) that foreign ownership is negatively associated with all measures of leverage.

The location of a SME within Business/industrial park (LOCT) has a positive connection and statistically significant to the SME possibility of acquiring debt. This finding was consistent with previous research by Hall et al. (2004), Vigren (2009), Russo and Rossi (2001). As like an expected at the fifth proposition, the SME within business/industrial Park would have easier access to debt finance than those located outside the business/industrial park. It is reasonable to interpret this fact as an indication that, the SME that located inside in the park seems to appear with better operational as a positive signal for lender. Besides, the SMEs located inside in the park also have an advantage in the financial relations with the banking system because very clear location and easier to monitor by lender. Indirectly, The SME location within well-managed industrial/business park, increase their credibility during interaction with other parties.

The TYPE coefficient is significantly negative associated with the SME probability to acquire debt. It means the manufacturing business firms have lower possibility than non-manufacturing business firms to acquire debt. This finding does not support the proposition and literature review that expect a manufacturing firm with intensive capital-asset, should have more capital requirement from external funding. However, this result in line with previous study by Scherr et al. (1993) which is the non-manufacturing businesses like services business may be in a position to repay their debt on time and take on more debt. It could happen because of the nature of their business, the non-manufacturing firms usually does not relatively need big amount of initial debt and they will be able to return profits faster than manufacturing firms. This result also suggests that the lender is more likely funding the services business project with less risk rather than manufacturing project more risky. This condition also supports by the lender which is more familiar and relatively easier to assess the feasibility of non-manufacturing business proposal. Overall, this finding implies if we want to support the SME in Batam, we should provide a good place and infrastructure with an affordable rate price particularly for SME.

The engage of export activities (EXPORT) were found to have a significantly positive relationship to the SME probability of acquiring debt. As expected, this finding supports earlier study (Abor, 2004) that revealed exporting firms are more diversified and may exhibit better cash flows compared with non exporting firms. Since Batam is close to International trading lines with high volume of export-import activities, the lender that operate in Batam, should have various of export-import funding scheme This finding also implies to support development of Export-oriented SME which is believed would give higher added value for business. The level of educational background (EDU) is statistically. It has significant and has positive connection to probability of acquiring a debt .This appears to support the results of earlier studies by Green, Kimuyu, Manos and Murinde (2002) that better educated manager/owner would have easier to present a good rational reason and better proposal for a loan to funding organization. However, beside their advantages in knowledge and skill ability, they would also appear a good confident level for lender. In line with previous research by Bebczuk (2004), the Strategic Development existence (STRAT) does not appear to affect the probability of acquiring debt although the sign of the coefficient same like as expected.

5. Conclusion

The results of this study have delivered some insights on debt financing of SME in Batam. Based on Mean Difference Analysis, location, activities for export, level of education, foreign shareholder involvement and firm size are considered as factors that could distinguish between groups of SME based on their ability to acquire debt. While based on logistic regression analysis result, firm location, firm activities for export, level of education and foreign shareholder involvement have significant relation to the SME probability to acquire debt. It implies the SMEs having characteristic such as: located within industrial park, engages with high volume export activities, less involvement of foreign shareholder and the manager hold at least degree program can increase the SME probability to acquire debt. Thus these four characteristics can be used by lender as

consideration to measure SME ability to acquire debt. In line with some previous researches on application of SME capital structure theory, this result also finds that the existence of Pecking Order Theory patterned by SME in Batam is to fulfil their need of funding sources.

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