Factors Affecting the Profitability and Growth of Small & Medium Enterprises (SMEs) in Indonesia

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ABSTRACT

Small and Medium Enterprises (SMEs) in Indonesia not only contribute to the economy, but also resist economic downturn, when many large businesses collapsed. The Government, banks and many others have interests to support SMEs retaining their roles. Earlier research questions diverge the importance of growth and profitability of SMEs. This research joins endeavour to discover drivers of SMEs’ profitability and growth. Having more than 3,500 respondents and applying ordinary least square, we find that SMEs manage optimal working capital to improve profitability and growth. SMEs that involve in foreign trading enjoy higher profitability. Banks’ loan drives SMEs profitability and sales higher, but collateral limits the growth. The results indicate that female causes better sales, but not profitability. Owners involvement in the business does not affect growth but adds profitability. Surprisingly, experience drives the growth and profitability down. Being in a capital city hurts SMEs’ growth, but does not affect profitability. The SMEs sub-sectors influence growth and profitability. Among macro-economic variables, only Bank Indonesia’s rates affect SMEs’ profit. The results hint where SMEs could invent strategies fit their goals better, and suggest banks or government agencies revise their policies to match the real needs of SMEs.

Keywords: SMEs; profitability; sales; growth; drivers; non-financial.

JEL Classification: L25, L26, L2

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INTRODUCTION

In Indonesia, small and medium enterprises (SMEs) have important roles in the economy. In 2013 the SMEs (predominantly micro businesses) contribute around 60% to GDP at current price and absorb 114.1 million labours or 97% of the employment (Ministry of Cooperatives and SMEs, 2015). These proportion do not change much during the last five years. Access of SMEs to banks loan is still limited; in 2013, among 57.9 million unit SMEs, only 17.5% have bank accounts. During this year, the amount of outstanding bank loan to SMEs is Rp639.5 trillion or 19% of total banks’ loan. In 2014, the loan amount to SMEs is increased to Rp767.5 trillion or 20.3% of the total bank loan, and to Rp830.6 trillion or 19.9% of the total loan in 2015 (Bank of Indonesia, 2015). The roles of SMEs in Indonesia are even considered more important due to their resilience to economic pressures, as had been shown during the periods of economic downturn (Wengel and Rodriguez, 2006, and Funabashi, 2013). Although, some other research argue that SMEs are the most vulnerable to economic crisis due to limited financial resources, pay higher interest rates, and many other weaknesses (see more on Bourletidis and Triantafyllopoulos, 2014). This research would not prolong this debate but noticed that recently there has been a growing interest to understand more the success factors of the SMEs. Government and monetary authority would concern how their policies affect the existence of SMEs; the banks or lenders want to know if their loan and terms fit the needs of the SMEs; and many others.

This research starts with a notion that growth and profitability of SMEs are important indicators of SMEs’ success. Profitability is important for the survival of the SMEs. Without it, the continuation of a firm is doubtful. While, growth is a measure of a firm’s ability to enlarge its market, and win the competition. Profitability and growth may influence each other. Rivard (2014) attempts to explain which come first, growth or profitability, and finds out that profitability is more important than growth. Following Lu and Beamish (2006), and Foreman-Peck, Makepeace and Morgan (2006), this research treats profitability and growth separately considering that SMEs may choose different strategies to target one or the other. The main objectives of this research are to find the drivers of growth and profitability of SMEs. Some of the probable drivers include factors common to business (working capital and business risk), link to banks (loan amount, quality of collateral, and firm’s ability to cover interest payment), and human factors which are more prevalent to SMEs, i.e., gender, employee relations, and experience. We add several control variables, i.e., strategic business location, sub-sectors of SMEs, monetary policy, and economic growth.

The results show that optimal working capital improves both profitability and sales, and SMEs that involve in foreign trading enjoy higher profitability but not sales. Banks’ loan drives SMEs profitability and sales higher, but collateral may hinder the growth. Moreover, the results indicate that female entrepreneurs cause better sales, but not profitability. Owners involvement in the business does not affect the sales but adds to profitability. Surprisingly, experience unfavorably drives sales and profitability lower. Effects of control variables are: Being in a capital city hurts the sales, but does not affect the profitability. The sub-sectors of SMEs influence both sales and profitability. Finally, except for higher BI rates that lower SMEs’ profitability, economic growth and monetary policy, have no impact on SMEs.
The remaining of this research is organized as follows. After the introduction, this research provides an overview of theories on the drivers of profitability and growth of the SMEs, and presents hypotheses. Then this research presents the sample, research design and variables. Further, this research describes sample statistics and discusses findings on factors affecting profitability and growth. As a closing, the research offers conclusion and policies implications.

**THEORIES AND HYPOTHESES**

**Working Capital**

Working capital is considered among the most important element to run SMEs. Abe, Troilo, and Batsaikhan (2015) affirm that SMEs may fail not because they do not deliver profits, but because they do not generate enough cash to pay the bills. Sola, Teruel, and Solano (2014) confirm that firm profitability is improved by increasing firms’ receivables. On firms’ growth, Hill, Kelly, and Lockhard (2012) conclude that working capital policy (trade credit) can help firms increases their sales growth. More specifically, Afrifa and Padachi (2016) find that SMEs are able to manage optimal working capital level at which firms’ profitability is maximum.

*Hypothesis 1a. SMEs’ growth is positively and optimally affected by the level of cash.*

*Hypothesis 1b. SMEs’ profitability is positively and optimally affected by the level of cash.*

*Hypothesis 2a. SMEs’ growth is positively and optimally affected by the level of inventory.*

*Hypothesis 2b. SMEs’ profitability is positively and optimally affected by the level of inventory.*

**Bank-related Variables**

Chittithaworn, *et al.* (2011) find that financing plays an important role to ensure the success of SMEs in Thailand. Khan (2015) underlines that in opposite to informal financing, the bank has an important and positive role in the growth of SMEs. Moreover, while studying SMEs in Bangladesh, Khandker, Samad, and Ali (2013) imply that when banks reduce their loan, then the profitability is declined. Ono, Sakai, and Uesugi (2012) find that pledged collateral depends on SMEs’ observed riskiness, and firms that provide higher collateral experience larger increases in profitability.

*Hypothesis 3a. SMEs’ growth is positively affected by the amount of banks’ loan.*

*Hypothesis 3b. SMEs’ profitability is positively affected by the amount of banks’ loan.*

*Hypothesis 4a. SMEs’ growth is positively affected by the level of pledged collateral.*

*Hypothesis 4b. SMEs’ profitability is positively affected by the level of pledged collateral.*

*Hypothesis 5a. SMEs’ growth is positively affected by the firms’ ability to pay interest.*

*Hypothesis 5b. SMEs’ profitability is positively affected by the firms’ ability to pay interest.*
SMEs’ Pertinent Variables

We enter variables pertinent to the success of SMEs, i.e., gender, owners’ engagement with employees, and experience. The role of female entrepreneurs is reflected in their managerial activities (see for example, Ruderman et al., 2002, and Powell and Edlesston, 2013). Based on these, we expect that female managers have positive impacts on the performance of SMEs. Regarding the role of employee relation, many researches find that owners engagement with their employee are associated with higher performance (Kor, 2003 and Robbins and Judge, 2013). Moreover, Kor states that managers’ experience contributes to growth opportunities.

Hypothesis 6a. SMEs’ growth is higher for female entrepreneurs.

Hypothesis 6b. SMEs’ profitability is higher for female entrepreneurs.

Hypothesis 7a. SMEs’ growth is higher for owners who engage with their employee.

Hypothesis 7b. SMEs’ profitability is higher for owners who engage with their employee.

Hypothesis 8a. SMEs’ growth is positively affected by owners’ experience.

Hypothesis 8b. SMEs’ profitability is positively affected by owners’ experience.

Expose to Foreign Trading

SMEs which are exposed to foreign trading (export or import activities) should have different characteristics that SMEs with pure domestic activities. Lu and Beamish (2006) discover that export activity has a positive impact on growth, but negative impact on profitability. Floros, Vlougaris and Lemonakis (2014) confirm that export activities have an adverse effect on efficiency and thus could lower firms’ profitability (See also Meilawati, 2016).

Hypothesis 9a. SMEs’ growth is positively affected by firms’ foreign trade activities.

Hypothesis 9b. SMEs’ profitability is negatively affected by firms’ foreign trade activities.

METHODOLOGY

Sample

Respondents in this research are SMEs. The definition of SMEs varies across countries. Abe (2009) indicates that in the East and South Asia there are various definitions differ from country to country. The definition of SMEs in Indonesia by Law No. 20/ 2008 regarding Micro, Small, and Medium Enterprises are: (1) Micro business is an enterprise with net assets no more than Rp50 million, excluding land and buildings, or an enterprise with annual revenues less than Rp300 million (net). (2) Small business is an enterprise with net assets between Rp50 to Rp500 million, excluding land and buildings, or an enterprise with annual revenues more than Rp300 million up to Rp2.5 billion. (3) Medium business is an enterprise with net assets more than Rp500 million up to Rp10 billion, excluding land and buildings, or an enterprise with annual revenues more than Rp2.5 billion up to Rp50 billion.
Using the above criteria, we get a random sample of SMEs from a national bank. The respondents are borrowers (SMEs) with credit limits from Rp500 million up to Rp10 billion, and annual sales between Rp2.5 billion to Rp50 billion (2015). Since information on total assets seems inaccurate, we avoid using this measure in this research.

Out of the initial sample size of 4,196 SMEs, we exclude observation with extreme values, i.e., firms with more than 50 years of experience, firms with negative earnings after taxes (EAT) or EAT above 30%, or if the estimated collateral values are higher than 300% or if firms located outside the Java Island. The final sample size becomes 3,964 SMEs.

Variables

Dependent Variables

The dependent variables in this research are firms’ growth and profitability. Since we do not have data to calculate SMEs’ growth, we apply a log-linear functional form, where the dependent variable is ln(sales) such that \( \text{ln(sales)} = \beta_0 + \beta_1 \text{Experience} \). Using this form, we can interpret the estimated coefficient as follows: for a one-unit increase in independent variable (1 year of experience) there will be \( \beta_1 \% \) increase in sales; thus, the \( \text{ln(sales)} \) corresponds to firms’ growth.

To measure the firms’ profitability, we use earnings after tax (EAT) to sales ratio.

Independent Variables

Working Capital. We measure working capital through cash and inventory levels. These variables are obtained from the SMEs report. To capture a possibility that SMEs implement an optimal working capital as suggested by Afrifa and Padachi (2016), we add quadratic forms for both cash and inventory levels.

Bank-related Factors. We use three measures to gauge the bank-related factors, i.e., loan amount, the percentage of pledged collateral and borrowers’ ability to cover the interest payment. The loan amount is long-term debt directly obtained from SMEs report, the pledged collateral is banks’ assessment on borrowers’ riskiness, and ability to pay the loan is a ratio between cash and interest.

Foreign Exchange Risk. We use a dummy variable to capture whether a firm involves in export or import operations, as follows: 1 – high involvement, or 0 – else.

SMEs’ Pertinent Factors. Many human factors are considered as unique to SMEs’ business. In this research, we apply three measures, gender, experience and owners’ engagement with employees. We use a dummy variable for gender, where 1- for female, or 0 – else. We also use a dummy variable for owner engagement, where 1 – high involvement, or 0 –else. The experience of the firm is stated on a yearly basis.

Control Variables

SMEs operates in various circumstances. Therefore, we include several control variables. For business location, we use a dummy: 1 – if located in or nearby the capital city (Jakarta). Business sectors dummies are for foods & beverage (F&B) and fashion sub-sectors. The economic growth is calculated from GDP (at current prices), and the monetary policy is measured by Bank of Indonesia’s rates, both at the time when the loan is disbursed.
Estimation Method

The data for this research are cross-sectional, i.e., the records (financial and non-financial) of 3,964 SMEs in 2015. We supplement macro-economic indicators (GDP’s growth and Bank of Indonesia’s rates) to the data. With relatively large sample size and the cross-sectional nature of the data, we consider the use of the ordinary least-square method.

RESULTS AND DISCUSSION

Statistics Descriptive and Correlation

We begin this part with a summary of sales and earnings after tax to sales ratio. The average annual sales is Rp18.5 billion and median Rp15.1 billion ranging from Rp0.7 to Rp49.9 billion. While the average EAT is 6.5% and median 5.7%, ranging from 0.01% to 29.6%. For the independent variables, Table 1 presents the descriptive statistics and a correlation matrix. The figures show that the average monthly cash and inventory are respectively Rp0.67 and Rp2.42 billion. The deviation of cash holding is much wider than that of the inventory. For bank-related variables, the table shows that the average loan amount is Rp2.3 billion with average pledged collateral of 127.8%. The table also indicates that SMEs maintain their ability to pay the interest with debt coverage ratio of 6.4. The table reveals that although SMEs have an average of 17.3 years of experience, only 12% of them is exposed to currency risk, by involving in export and/or import activities. Lastly, the table indicates that almost all (99%) of the owners are highly engaged with their employees, and female represents only 12% of the entrepreneurs.

Table 1. Descriptive Statistics and Correlations

<table>
<thead>
<tr>
<th>No</th>
<th>Variables</th>
<th>Mean</th>
<th>Std. Dev.</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Monthly Cash, Rp. billion</td>
<td>0.671</td>
<td>1.240</td>
<td>0.243</td>
<td>0.292</td>
<td>0.036</td>
<td>0.054</td>
<td>0.216</td>
<td>0.012</td>
<td>0.001</td>
<td>0.032</td>
</tr>
<tr>
<td>2</td>
<td>Monthly Inventory, Rp. billion</td>
<td>2.423</td>
<td>2.415</td>
<td>0.509</td>
<td>0.004</td>
<td>0.116</td>
<td>0.160</td>
<td>0.021</td>
<td>0.023</td>
<td>0.074</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Loan, Rp. billion</td>
<td>2.278</td>
<td>1.957</td>
<td></td>
<td></td>
<td></td>
<td>0.125</td>
<td>0.103</td>
<td>0.023</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Debt Service coverage Ratio</td>
<td>6.411</td>
<td>11.986</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>0.010</td>
<td>0.015</td>
<td>0.006</td>
</tr>
<tr>
<td>5</td>
<td>Collateral, %</td>
<td>127.778</td>
<td>42.944</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>0.029</td>
<td>0.010</td>
<td>0.075</td>
</tr>
<tr>
<td>6</td>
<td>Forex Risk (Dummy)</td>
<td>0.121</td>
<td>0.326</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>0.015</td>
<td>0.006</td>
<td>0.003</td>
</tr>
<tr>
<td>7</td>
<td>Female (Dummy)</td>
<td>0.199</td>
<td>0.399</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>0.018</td>
<td>0.050</td>
</tr>
<tr>
<td>8</td>
<td>Employee Relation (Dummy)</td>
<td>0.990</td>
<td>0.119</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>0.043</td>
</tr>
<tr>
<td>9</td>
<td>Experience, year</td>
<td>17.270</td>
<td>9.737</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Min indicates negative sign.
The correlation matrix in Table 1 reveals that there is a low correlation between almost all independent variables. The only pair with relatively modest correlation is the loan amount and inventory ($r=0.51$). Similarly, when we add control variables (figures not shown) we find that collinearity would not be a serious problem in our estimation. We drop total assets from a list of control variables due to its high correlation with the inventory ($r=0.74$) and with loan amount ($r=0.57$). Despite that the loan amount and inventory can replace the total assets to control for the size.

4.2 Estimation Results

We use ordinary least square to estimate both the profitability and growth models. For the growth model, we apply a natural log transformed sales, ln(sales), as the dependent variable, such that the equation turns into $\ln(sales) = \beta_0 + \beta_1 \text{Experience}$. Using this functional form, we can interpret the results that for a one-unit increase in independent variable (e.g., 1 year of experience) there will be $\beta_1\%$ increase in sales; thus, the use of ln (sales) corresponds to a firm’s growth.

<table>
<thead>
<tr>
<th>Independent Variables</th>
<th>Ln (Sales)</th>
<th>Earnings after Tax, %</th>
</tr>
</thead>
<tbody>
<tr>
<td>(Constant)</td>
<td>8.973***</td>
<td>6.758***</td>
</tr>
<tr>
<td>Month Cash, Rp.billion</td>
<td>0.229***</td>
<td>0.790***</td>
</tr>
<tr>
<td>Month Cash$^2$</td>
<td>-0.017***</td>
<td>-0.037***</td>
</tr>
<tr>
<td>Month Inventory, Rp.billion</td>
<td>0.220***</td>
<td>-0.566***</td>
</tr>
<tr>
<td>Ln (Loan, Rp.billion)</td>
<td>0.329***</td>
<td>0.722***</td>
</tr>
<tr>
<td>Debt Service Coverage Ratio, %</td>
<td>0.013***</td>
<td>0.079***</td>
</tr>
<tr>
<td>Collateral, %</td>
<td>-0.001***</td>
<td>0.003*</td>
</tr>
<tr>
<td>Forex Risk (Dummy)</td>
<td>-0.112</td>
<td>0.618***</td>
</tr>
<tr>
<td>Female (Dummy)</td>
<td>0.053**</td>
<td>0.016</td>
</tr>
<tr>
<td>Employee Relation (Dummy)</td>
<td>0.090</td>
<td>1.138*</td>
</tr>
<tr>
<td>Experience, Year</td>
<td>-0.004***</td>
<td>-0.015*</td>
</tr>
</tbody>
</table>

Control Variables

<table>
<thead>
<tr>
<th></th>
<th>B</th>
<th>Std. Error</th>
<th>B</th>
<th>Std. Error</th>
</tr>
</thead>
<tbody>
<tr>
<td>Jabotabek (Dummy)</td>
<td>-0.115***</td>
<td>0.019</td>
<td>0.224</td>
<td>0.152</td>
</tr>
<tr>
<td>Food and Beverage (Dummy)</td>
<td>0.152***</td>
<td>0.028</td>
<td>-1.711***</td>
<td>0.221</td>
</tr>
<tr>
<td>Fashion (Dummy)</td>
<td>-0.044**</td>
<td>0.021</td>
<td>0.389**</td>
<td>0.168</td>
</tr>
<tr>
<td>BI Rate, %</td>
<td>0.004</td>
<td>0.005</td>
<td>-0.105**</td>
<td>0.042</td>
</tr>
<tr>
<td>GDP Growth, %</td>
<td>-0.008</td>
<td>0.016</td>
<td>-0.209</td>
<td>0.129</td>
</tr>
</tbody>
</table>

Model Indices

| No of Cases | 3,964      | 3,964      |
| Adj. R Square | 0.542      | 0.097      |
| Durbin-Watson | 1.576      | 1.957      |

***p< 0.01; ** p < 0.05; * p < 0.10 (all two-tailed tests).
Table 2 displays the estimation results, for growth (columns 2 and 3) and profitability models (columns 4 and 5). As indicated earlier in Table 1, we expect the models are free from multi-collinearity issue. Furthermore, at the bottom of Table 2, we provide some additional figures indicating quality of the models. We believe the models are free from serial correlation issue (Durbin-Watson of around 1.576-1.957) and have relatively high R Square (54%) for growth model and modest R Square (9.7%) for profitability model. For comparison, Lu and Beamish (2006) in examining similar models get R Square of 10-12% for growth model and around 6% for the profitability model.

We predict the critical role of working capital for SMEs’ operations. We add quadratic terms for both cash and inventory. The results not only confirm the important of cash and inventory but also reveals that SMEs’ manage levels of inventory and cash to optimize growth or profitability. Flipped signs between cash (+) and cash² (-) denotes that the firms maintain the cash holding level up to a maximum profitability or growth where beyond these levels adding cash would hurt sales growth and profitability (inverted U-shape). For inventory, the results are more complex. To support sales growth, the firms need to increase inventory up to a certain level (inverted U-shape), but to gain more profit the firms need to lower the inventory level up to an optimal minimum profitability level (U-shape).

We hypothesize that banks have roles to support the development of SMEs. Contrary to the results of Moreira’s (2016) and McPherson and Rous’ (2010), results of this research confirm that an increase in loan amount will grow the firms faster and improve their profitability. The higher banks’ assessment on collateral (banks perceive a higher risk) then the profitability is increased; however, it hinders the sales growth (negative sign). On the SMEs side, we find that the higher debt-service ratio (higher ability to pay interest) the higher are their growth and profitability. Further, we use a dummy variable to assess if SMEs with foreign trading will perform differently. The results show that firms with export/import activities perform lower sales growth (opposite to Lu and Beamish, 2006) but higher profitability. This means firms with international activities might face tougher competition but could seize higher profit opportunity.

In this research, we re-examine some variables peculiar to characteristics of SMEs. Despite the small numbers of female entrepreneurs (represent only 20% of the SMEs), the results confirm that female enables SMEs to achieve higher sales growth but does not affect the profitability. This may be due to the higher tendency among female to respond to their customers better and thus improve the sales. We also find that the owner high engagement with employees can improve profitability, but has no impact on sales growth. Moreover, we get a counter-intuitive result that experience has an undesirable effect on firms’ growth and profitability. This is comparable to results of Voulgaris, Asteriou, Agiomirgianakis (2003). Another possible explanation might be because more experienced firms act more cautiously and this slow-down firms’ growth and profitability.

Finally, we test the effect of control variables including dummies for business location and SMEs sub-sectors, monetary policy and economic growth. We find that being located in or near the capital city pushes the sales growth down, perhaps due to tougher competition, but has no significant impact on profitability. Regarding business sectors, those in F&B business have higher growth but lower profitability, and reversed consequence for the fashion business. Regarding the monetary policy, we find that higher interest rates will lower the profitability
as expected, but do not affect the growth. Lastly, we cannot find any effect of the economic growth in the SMEs’ growth or profitability. Interestingly, the coefficients are negative but statistically not significant. This might be a confirmation that the presence of SMEs is not affected by the economic condition, that they can emerge as alternate ventures during economic crises (negative economic growth).

CONCLUSION AND IMPLICATION

This research reveals fascinating facts on how working capital drives profitability and growth. The level of inventory must be carefully monitored if the firms concern more either on profit or sales growth. The effect of cash holding is concurring. This research also shows that being in foreign trades might add profitability but sacrifice the growth. Further, we should think wisely which sectors to pursue since the choice has different impacts on profitability and growth.

This research admits the importance of banks. Though, the banks should be aware that SMEs’ survival is also due to SMEs’ abilities to provide high collateral and loan coverage. In this case, monetary authority should concern that high prime rates will hurt the SMEs. It appears that fiscal policy (economic growth) shows no direct effect on SMEs. These issues could be more serious among non-bankable ventures which are beyond the scope of this research.

Regarding the effects of human factors, this research offers several insights. Firstly, we should not overestimate the experience in pursuing growth and profitability. Secondly, female recruits are right choice to drive the firms to grow faster. Lastly, owners’ involvement should be focused on the financial area to preserve the profitability of the firms.

REFERENCES


Indonesian Act No. 20 Year 2008 regarding Micro, Small and Medium Enterprises


