ANALYZING DETERMINANTS OF PROFIT OF SMALL AND MEDIUM ENTERPRISES IN THE MEKONG DELTA

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This paper aims at getting an insight into determinants of return of small and medium enterprises (SMEs) in the Mekong Delta through the estimation of the regression model in which return on sales (ROS), or operating profit margin, is a dependent variable, and determinants of their profit are independent variables. The estimation is based on primary data gathered from 1,017 enterprises in the period 2006 - 2010. The results reveal that their ROS is affected by (1) ratio of fixed assets to sales, (2) sizes of the enterprises, (3) the ratio of current assets to sales, (4) and (5) the age and origin of machinery, and (6) the GDP growth rate. The paper, thereby, proposes measures to raise SMEs' returns.

Keywords: profit, sales, small and medium enterprises, economic growth

1. Introduction

Profit is one of the primary goals of a business. It is vital for the development of not only the business itself and industry but also the whole economy. Especially for SMEs, profit is even more important because it allows them to expand their scales and modernize their technology for a future sustainable growth.

Practical experiences, along with previous studies, show that an enterprise's profit is influenced by both microeconomic factors belonging to the enterprise itself (capital, managing capabilities, and scales, etc.) and macroeconomic factors (economic growth rate, interest rates, inflation, performance of governmental bodies). However, effects of these factors are not always the same, that is, some of them make impacts in certain situations and at certain times while the others do not, and vice versa. Hence, it is of necessity to fathom the factors to improve businesses' profit, thereby promoting economic growth, as businesses are producers of goods, a primary component of the gross output of a province, region or country.

The paper aims at analyzing determinants of profit among SMEs in the Mekong Delta and thereby putting forward solutions to development of this class of enterprises. This is very meaningful because SMEs have been taking a considerable part in increasing income, providing employment and promoting economic growth. The estimation is conducted through a regression model that is comprised of determinants of profit and based on primary data gathered from 1,017 enterprises in the period 2006 - 2010 in combination with secondary data from related agencies.

2. Methodology and model

As mentioned above, the paper is to estimate the regression model, in which return on sales (ROS), or operating profit margin, is the dependent variable, and determinants of their profit are independent variables as indicated in previous researches and practices. Here is the model:

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$$TYSUATLN = \beta_0 + \beta_1 CHUYENMON + \beta_2 TSCODINH + \beta_3 QUYMO + \beta_4 QUYMO^2 + \beta_5 QUYMO^3 + \beta_6 TSLUUDONG + \beta_7 HQNHANUOC + \beta_8 CPBOITRON + \beta_9 CPBOITRON^2 + \beta_{10} TUOIMAYMOC + \beta_{11} NGUONGOCMM + \beta_{12} TAPHUAN + + \beta_{13} CANHTRANH + \beta_{14} MATBANG + \beta_{15} TTRUONGGDP + \beta_{16} LAISUAT + \beta_{17} LAMPHAT$$

In the model, *TYSUATLN* (%) is operating profit margin. *CHUYENMON* is the manager's expertise determined by his/her educational background. Researches have shown that the more professional managers are, the more they can approach new knowledge of management and technologies, resulting in higher effectiveness in deploying resources to increase profit. Therefore, the coefficient β_1 is expected to be positive.

TSCODINH is the ratio of fixed assets to sales. The higher the ratio is, the less effectively the potential of fixed assets are exploited, which decreases profit (Demir, 2009). Therefore, the coefficient β_2 is expected to be negative.

The profit of a business is closely connected with its size (Porter, 1998; Amato and Amato, 2004). According to Porter (1998), large and small enterprises have advantages to grow fast over medium ones. Specifically, small businesses can easily exploit market niches at low costs to increase profit, thanks to their inherent flexibility. And despite their poorer flexibility, large businesses have strategies to dominate the market to gain higher profits by means of their prestigious brand names and economies of scale. Meanwhile, enterprises of medium size not only lose flexibility but also fail to develop these strategies because their prestige and size are not big enough.

Altogether, the operating profit margin of a business will rise steadily when its size reaches a certain marker, and it will fall afterward; however, the upward trend will continue after the size reaches a second marker. Thereby, profit margin is the cubed function of sizes (as shown in the model), in which the coefficient β_3 of the variable *QUYMO* (the logarithm of fixed assets value) is positive, β_4 negative and β_5 positive.

As the survey covers only SMEs, however, the above-mentioned advantages of large businesses are absent. It is just that when sizes expand, profit margin will rise because of decreases in average and marginal costs. As for SMEs, they usually do not follow modern management models and lack professional managers, and they fail to adjust management models and capabilities just in time when their sizes go beyond a certain marker with the result that their expenses tend to increase and profit decreases. The coefficient β_3 will then be positive and β_4 negative.

Another crucial determinant of a business's profit is current assets (cash, money reserves, etc.). They help businesses make the best use of productive opportunities by allowing them to employ more workers, increase reserves for higher product supplies, boost advertising, and open more showrooms or customer care centers, etc. In addition, if current assets are sufficient and used effectively, they can keep enterprises from taking out short-term loans and therefore from the adverse effects of fluctuations in interest rates. As a result, the research also includes the variable *TSLUUDONG* (the ratio of current assets to sales). The coefficient β_6 is expected to be positive.

HQNHANUOC is a dummy variable measuring the performance of commercial authorities such as Services of Planning and Investment, Services of Trade and Industry and Tax Agencies, etc. The measurement is based on the feedback by the enterprises surveyed. The variable alternately takes the values of 1, 2, 3

and 4 which correspond to ineffectiveness, low effectiveness, effectiveness, high effectiveness. It is obvious that if public services succeed in assisting businesses to fulfill necessary procedures in less time and cost to take productive opportunities, then profit will rise. As a consequence, the coefficient β_7 is expected to be positive.

The research also covers the effects of "greasing-the-wheels" expense. Economists have formed various arguments about relationship between "greasing" expense and profit. The positive view has it that "greasing" expense can increase businesses' profit because it makes administrative machinery run smoothly thereby helping enterprises take profitable opportunities timely (Svensson, 2005). The negative view, however, maintains that such expense increases the production cost and reduces the profit. Moreover, once enterprises accept to pay "greasing" expense, corrupted officials will produce more red tapes to milk more "grease" from enterprises (Krueger, 1993), which can take profitable opportunities away from enterprises.

Through empirical studies, economists have pointed out that a non-linear relationship between "greasing" expense and a business's profit did exist. This means that those enterprises which are willing to grease corrupted officials' hands will exploit profitable opportunities better. The assumption is true in reality where many enterprises proactively pay "greasing" expense before being asked because they think that this will facilitate their business. However, if the expense rises too much, it will lower profit. Thus, "greasing" can help increase enterprises' profit to a certain extent and when the expense goes up substantially, it will reduce profit. As a result, the coefficient β_8 of the variable *CPBOITRON* (the ratio of "greasing" expense to fixed assets) is positive and β_9 negative.

One of the determinants of a business's profit is the age of machinery (*TUOIMAYMOC*). Old machinery can diminish profitability because they raise costs of operation and maintenance and reduce output quality and productivity. Thus, β_{10} is expected to be negative.

Besides, the origin of machines (*NGUONGOCMM*) also affects businesses' profit. The dummy variable is given the value of 0 if machinery is made locally and 1 if imported. It affects profit margin in two opposing ways. On the one hand, foreign machinery is more modern and more efficient, thus increasing profit. On the other hand, the purchasing price of these machines is higher, resulting in higher amortization cost and lower profit. Consequently, β_{11} can be positive or negative depending on whichever factor dominates.

What also contributes to an enterprise's profit is the number of training courses taken by business managers (*TAPHUAN*). Attending these classes can help managers enhance managing capabilities, build good relations with customers and suppliers, and keep their knowledge updated, etc. Hence, β_{12} is usually expected to be positive. Nonetheless, some studies have indicated that the influences of the variable on profit depend on the quality of the classes as well; that is, classes of good quality will have positive effects on profit, and vice versa.

According to the microeconomic theory, competition is also an influential factor to profit. The more intense the competitive pressure becomes, the harder enterprises have to try to improve the quality of their products, to strengthen advertising and sales promotion, etc. to avoid a loss of market shares. Yet, these activities can be beneficial in the long term, but will raise expenses and reduce profit in the short term. Therefore, the coefficient β_{13} of the variable *CANHTRANH* (representing competi-

tion) equals 1 if the competitive pressure facing enterprises is low, 2 if moderate, 3 if high, or 4 if very high. And it is expected to be negative.

To make full use of opportunities to increase profit, enterprises need good premises for displaying products, opening offices, etc. Thus, the lack of premises can diminish such opportunities. The coefficient β_{14} of the variable *MATBANG* (representing premises) takes the value of 1 if the premises are insufficient for doing business and manufacturing, 2 if they are barely sufficient for current use, 3 if they are sufficient for the next one to five years, and 4 if they will be available in the long term. The coefficient is expected to be positive.

Aside from microeconomic factors, profit is also influenced by macroeconomic ones, particularly the GDP growth rate (*TTRUONGGDP*). It is because if the economy is booming, all sectors will function well and people's income and spending will rise, therefore facilitating business operations. In contrast, if the economy stagnates, banks will limit their loans, so enterprises will be underfunded and consumption will fall, resulting in decreased business profit. In consequence, the coefficient β_{15} of *TTRUONGGDP* is expected to be positive.

There are two other variables which affect profit, *LAISUAT* (formal lending rates, %/year) and *LAMPHAT* (inflation rate, %/year). Interest rates make apparent impacts on a business's profit because they affect its capital costs, especially for businesses employing loan capital. In general, the coefficient β_{16} of *LAISUAT* is expected to be negative. But for enterprises enjoying huge equity capital, these impacts could be insignificant. Another influential factor to profit is inflation which raises production costs (due to increased input prices) and product prices as well. These effects can hardly be identified in theory and can only be tested in reality. Thus, the coefficient β_{17} of *LAMPHAT* can be either positive or negative.

However, according to the macroeconomic theory, rates of interest and inflation are usually intimately related, for high inflation forces commercial banks to raise lending interest rates (Mankiw, 2009). Therefore, the two variables, namely *LAISUAT* and *LAMPHAT*, are not used simultaneously, but alternately in models 1 and 2 (see the regression result below).

3. Descriptions of the sample

The primary data used in the paper is collected from 1,017 SMEs in the Mekong Delta. Their fixed assets – a universal standard for measuring a business's size – are estimated at VND8.8 billion, which indicates that their sizes are rather small. The current assets of the sample are also approximately VND8.8 billion. Although the average workforce is only 86, the SMEs which are operating in large quantities considerably contribute to creating employment and income for laborers in the Mekong Delta.

The average revenues of each sample enterprise are only VND20 billion per year. The survey reveals that the profit margin of the sample amounts to 23.2%, which is quite impressive. The businesses are fairly young (eight years on average). The educational background of the highest manager averages 3.2 (or approximately above the senior high school level). The average age of machinery in use is 5.5 years with 55% of them are imported. Last, the "greasing" expense of each enterprise is on average VND795,000 per year.

4. Regression analysis

The least squares results are presented in the following table. Model 1 (corresponding to columns 1, 2 and 3) shows that the coefficient of *TSCODINH* takes a negative value at the significance level of 1%, implying that if fixed

assets are not effectively deployed, profit margin will fall. Thus, it is vital that businesses invest and exploit these assets effectively.

Model 1 tests the relationship between profit margin and the size of a business. First, column 1 only covers *QUYMO* and as shown in the regression result, the coefficient of this variable is not statistically significant despite its positive value. Similarly, as it can be seen in column 3, the variables *QUYMO*, $QUYMO^2$ and $QUYMO^3$ all match expectations but are not statistically significant. However, according to column 2, the coefficient of *QUYMO* is positive at the significance level of 1% and that of $QUYMO^2$ is negative at 5%. This suggests that when the size is expanded, profit margin rises due to decreases in average and marginal costs; yet, when the size exceeds a certain marker, profit margin will fall, as explained earlier.

Model 1 also denotes that current assets are of significance for profit margin because the coefficient of *TSLUUDONG* is positive at the significance level of 1%. Two other variables affecting profit margin are *NGUONGOCMM* and *TUOIMAYMOC*. Specifically, the coefficient of *NGUONGOCMM* is negative at the significance level of 5%, signifying that the employment of imported machinery can diminish profit margin due to high purchase and amortization costs. At the same time, the coefficient of *TUOIMAYMOC* is negative at the significance level of 5%, implying that the use of age-old machinery also reduces profit. Additionally, the regression result reveals that profit is under the influence of the GPD growth because the coefficient of *TTRUONGGDP* is positive at the significance level of 1%.

The result of model 1 shows that the coefficients of the other variables are not statistically significant, leading to the conclusion that to a certain extent, these factors do not affect the profit margin of the SMEs surveyed.

To make the test result more convincing, *LAMPHAT* is substituted for *LAISUAT* in model 2 (corresponding to columns 5, 6 and 7). As per aforementioned analyses in which interest rates and inflation are found closely connected, the substitution hardly alters the regression result. Last, the coefficients R^2 and adjusted R^2, and the F-statistic value in both models are very high, which proves the usefulness of the models for analyzing the determinants of profit margin of SMEs in the Mekong Delta.

5. Conclusion and solutions

a. Conclusion:

Profit plays a vital role in a business's development. Thus, it is essential, especially for SMEs, to find out about determinants of their profit. This paper is intended to do so through the estimation of the regression model in which the dependent variable is profit margin, and independent variables are factors related to businesses' profit.

As can be seen in the regression results, profit margin is affected by factors belonging to enterprises such as the ratio of fixed assets to revenues, sizes of the businesses, the ratio of current assets to revenues, and the age and origin of machinery. Besides, high GDP growth rate can facilitate business operations. Concerning interest rates and inflation, they are not influential to businesses' profit, according to the survey. Thereby, the paper will suggest several solutions for improving enterprises' profits in the following section.

b. Solutions:

The regression result shows that profit margin depends on the aforementioned factors. Therefore, they should be taken into account if a business is to increase its profit. First of all, it is necessary to make a reasonable purchase of fixed assets, especially to apply the investment theory in real option approach (Ninh, 2010). Besides

Regression result:

Dependent variable: TYSUATLN – profit margin

Variable	Model 1			Model 2		
(1)	(2)	(3)	(4)	(5)	(6)	(7)
Constant C	–0.189	–0.452**	–0.471	–0.203	-0.465**	–0.484*
	(–0.957)	(–2.033)	(–1.635)	(–1.066)	(–2.158)	(–1.710)
TYSUATVONCD	–0.016***	–0.016***	–0.016***	–0.016***	–0.016***	–0.016***
	(–24.490)	(–23.564)	(–23.226)	(–24.490)	(–23.564)	(–23.226)
HOCVAN	–0.001	–0.001	–0.001	–0.001	–0.001	–0.001
	(–0.187)	(–0.093)	(–0.095)	(–0.187)	(–0.093)	(–0.095)
QUYMO	0.021	0.194***	0.216	0.021	0.194**	0.216
	(1.221)	(2.770)	(0.963)	(1.221)	(2.770)	(0.963)
$QUYMO^2$		–0.027**	–0.034		-0.027**	–0.034
		(–2.549)	(–0.511)		(–2.549)	(–0.511)
$QUYMO^3$			0.001			0.001
			(0.103)			(0.104)
VONLUUDONG	0.011***	0.011***	0.011***	0.011***	0.011***	0.011***
	(3.251)	(3.375)	(3.372)	(3.251)	(3.375)	(3.372)
HQNHANUOC	0.014	0.017	0.017	0.014	0.017	0.017
	(0.885)	(1.044)	(1.034)	(0.885)	(1.044)	(1.034)
CPBOITRON	–0.002	–0.002	–0.002	–0.002	–0.002	–0.002
	(–0.372)	(–0.418)	(–0.421)	(–0.372)	(–0.418)	(–0.421)
$CPBOITRON^2$	4.73E-05	4.83E-05	4.85E-05	4.73E-05	4.83E-05	4.85E-05
	(0.690)	(0.708)	(0.710)	(0.689)	(0.708)	(0.709)
TUOIMAYMOC	–0.007**	–0.007**	–0.007**	–0.007**	–0.007**	–0.007**
	(–2.230)	(–2.277)	(–2.277)	(–2.230)	(–2.277)	(–2.277)
NGUONGOCMM	–0.067**	–0.064**	–0.064**	–0.067***	–0.064**	–0.064**
	(–2.427)	(–2.322)	(–2.316)	(–2.427)	(–2.322)	(–2.316)
HUANLUYEN	–0.005	–0.003	–0.003	–0.005	–0.003	–0.003
	(–1.384)	(–0.960)	(–0.946)	(–1.384)	(–0.960)	(–0.946)
MATBANG	0.004	0.006	0.006	0.004	0.006	0.006
	(0.348)	(0.505)	(0.502)	(0.348)	(0.505)	(0.502)
CANHTRANH	–0.010	–0.010	–0.010	–0.010	–0.010	–0.010
	(–0.639)	(–0.673)	(–0.675)	(–0.639)	(–0.673)	(–0.675)
TTRUONGGDP	0.081***	0.078***	0.078***	0.080***	0.078***	0.078***
	(4.745)	(4.607)	(4.512)	(4.723)	(4.586)	(4.491)
LAISUAT	–0.003	–0.002	–0.002			
	(–0.458)	(–0.443)	(–0.444)			
LAMPHAT				–0.001	–0.001	–0.001
				(–0.458)	(–0.443)	(–0.444)
Observations (N)	1,017	1,017	1,017	1,017	1,017	1,017
R^2	0.558	0.563	0.563	0.558	0.563	0.563
Adjusted R^2	0.547	0.551	0.550	0.547	0.551	0.550
F-statistic	49.928	47.495	44.448	49.928	47.495	44.448

Source: Data collected in 2006-2010

Notes: ***, **, and * denote significance levels of 1%, 5%, and 10%, respectively.

, businesses should also learn how to use their fixed assets scientifically for minimum waste and maximum profit.

The result also reveals that when an enterprise's size exceeds a certain extent, its profit drops. This is because of the outdated management methods and the lack of professional managing staff. To maintain profitability, hence, enterprises are advised to pay more attention to their own managing capabilities and employ professional managers if their sizes show signs of going beyond the current manager's capability.

In addition, it is indicated in the regression that the ratio of current assets to revenue is responsible for profit margin. This implies that a business should own a large enough amount of current assets to timely meet customers' changeable needs as well as preserve materials to avoid fluctuations in their prices.

Finally, the origin and age of machinery play an important role in profit margin. Thus, before importing machines, businesses need to pay attention to their prices and quality and make sure that they are suitable to customers' needs in terms of model, shape and quality. Moreover, they should think about replacing old machines that hinder the growth of their profits■

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