

Impact of Cost Control on Business Efficiency of Small and Medium Sized Enterprises in Thai Binh, Vietnam

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Abstract

This study is conducted for investigating the impact of cost control on business efficiency of small and medium-sized enterprises (SMEs) in the area of Thai Binh, Vietnam for the period from 2012 to 2014. Impacting factors were built and verified on business efficiency of SMEs including (i) *Cost of goods sold ratio*, (ii) *Financial expense ratio*, (iii) *Administration expense ratio*, (iv) *Firm size*, (v) *Financial leverage*, (vi) *Assets structure*, and on *Pre-tax return on sales ratio* and *Pre-tax return on assets ratio*. The study employed regression models of OLS, FEM, REM and GLS with multi-year dataset of SMEs in Thai Binh province. The results show that the ratios of *cost of goods sold*, *financial leverage*, and *administration expenses* have negative relation with business efficiency, but affecting Return on sales (ROS) and Return on assets (ROA). In addition, *financial leverage*, *assets structure* and *firm size* have small impacts on ROS and ROA. Also, basing on the findings, SMEs operating in the form of joint stock company have higher business efficiency than those operating in the form of limited liability company.

Keywords: Small & medium-sized enterprise, Business efficiency, GLS model, Thai Binh

1. Introduction

SMEs always play an important part in national economy with considerable contribution to economic growth, job creation, income increase, and social stability. They help to fill in market gaps unoccupied by large enterprises and contribute to the economy's smooth operation (Marchesnay et al., 1998). Especially, SMEs have an important role in sharpening business management skills and promoting innovation. Moreover, SMEs help to build close links to explore and bring into play potentials of provinces. Therefore, stepping up support for the development of SMEs is considered an effective tool in mobilizing capital and other resources for business operation, which contributes to economic growth and social stability.

According to criteria for classifying enterprises, almost all enterprises in Vietnam are SMEs. In terms of labor scale, 324,377 SMEs out of 348,342 operating enterprises, accounting for 97.7%, of which 68.7% are micro enterprises, 27.1% are small-sized enterprises and only 1.9% are medium-sized enterprises.

Reports of the Ministry of Planning & Investment in 2016 show that business efficiency of SMEs was much lower than that of the overall level of enterprises. For instance, out of one Vietnam dong (VND) spent for business operation, SMEs only gained 0.38 VND in return compared to 2 VND of the general level. This result reflected SMEs's more limited capital scale, capability of management, technology and market access compared to large-sized enterprises.

Thai Binh province is the center of the Red River Delta; its infrastructure system has been built, upgraded, and expanded to become a national and regional economic link, thus it creates more favorable conditions for investment and socio-economic development. Even though SMEs in Thai Binh have gained important achievements and played an increasingly important role in the province's economic development, they still experience many difficulties such as outdated technology levels, weak business management skills, restricted access to credit resources and business premises. According to General Statistics Office of Vietnam (2015), enterprises in Thai Binh have very low business efficiency in comparison with the general level of the whole country and of other provinces in the Red River Delta. Data of return ratios and profit before tax of SMEs are shown in Table 1 and Table 2.

Table 1. Return ratios of enterprises by Places (*Unit in %*)

Place	2009	2010	2011	2012	2013	2014
The whole country	5.39	4.53	3.16	3.13	3.91	4.04
The Red River Delta	5.55	3.86	2.92	2.80	4.53	4.04
Thai Binh	1.94	0.59	-0.19	-0.54	-1.07	-1.09

Table 2. Profit before tax of enterprises by areas (*Unit in billion dong*)

Area	2009	2010	2011	2012	2013	2014
The whole country	327,207	350,301	334,407	358,937	488,273	556,695
The Red River Delta	95,222	96,261	100,199	104,838	196,685	184,186
Thai Binh Province	501	215	-97	-288	-625	-724

On 18th October, 2013 the People's Committee of Thai Binh issued Planning No. 59/KH-UBND on developing SMEs in the provincial area for the period from 2013 to 2015, which provides guidelines and policies, encourages the development of SMEs and helps SMEs bring into play their potential in investment and business development. However, it is the matter of whether these guidelines and policies follow the practical situation and really help SMEs develop or improve their business efficiency.

Cost control is the analysis and assessment of the practical situation of using capital resources and cost; from that decisions are given about short-term and long-term cost of enterprises. Cost control is an important activity of cost management. In order to control cost incurred daily, it is important for managers to identify types of cost. Especially, they should identify controllable cost so that they can have appropriate plans for controlling cost and skip uncontrollable costs. There are always certain fluctuations in business operation cost of enterprises for each period. Therefore, one of important tasks in cost management is to consider and select the most cost-saving and effective cost structure. Cost management includes analyzing and providing an optimal cost structure and mobilized capital resources in each period; having an appropriate policy for cost distribution and profit level; controlling asset usage to avoid waste and inaccurate usage purpose.

This study aims to analyze the business efficiency of SMEs in Thai Binh during 2012 to 2014 and verify factors regarding the capability of cost control on business efficiency based on the accounting principles in determining performance effectiveness. In addition, we considered how the difference in business form of SMEs affects the capability of cost control and business efficiency.

2. Theoretical Framework

2.1 Business Efficiency

The efficiency of any economic activity is reflected through the relation between input and output. An efficient economic activity means less amount of input is required for the same amount of output or, to put it differently, more amount of output is produced for the same amount of input. According to Guerrien (2007), efficiency is the technical term used to indicate the distribution of resources in the best way. Depending on the measurement method, efficiency can be called technical efficiency or economic efficiency. From theoretical perspective, there are two approaches regarding the concept of efficiency:

The first approach states that efficiency is the concept that represents the relationship between the achieved result when carrying out goals and cost spent to achieve that result by

an entity in certain conditions. Under this approach, efficiency can be shown in terms of number and quotient and the bigger the outcome compared to cost spent, the higher the efficiency.

The second method admits that efficiency is an indicator that reflects the level of return in order to reach a specific goal by an entity in relation with a unit of resource spent during operation. Regarding this approach, efficiency is always associated with a certain goal - the obtained result. If an activity does not have a goal, it is not possible to identify efficiency. Therefore, efficiency is the concept that reflects the relationship between cost spent and obtained result after the process as well as the level of using resources while obtained result is the specific goal that enterprises wish to achieve and is considered the necessary factor for identifying and evaluating efficiency (Do, 2012). However, in reality, there are many different aspects of activities such as economic, political and social activities; that is why when mentioning the efficiency of a field of activity, the name of the field of activity is put together with efficiency, such as economic efficiency, social efficiency, political efficiency. Economic efficiency is of utmost importance because it decides and affects all other fields of activities in normal life; it reflects the level of using resources to achieve economic targets in a specific period. From a narrower view for each firm, economic efficiency is business efficiency.

Smith (1997) stated that business efficiency is meant the obtained result in economic activities. According to this viewpoint, if there are two different amounts of cost to obtain the same business results, they both have the same efficiency. So, this viewpoint considers business efficiency the same as business result. Samuelson & Nordhaus (2001, p. 125) wrote in the book *Economist* that: “efficiency is the most effective use of resources in the economy to satisfy human needs”. So efficiency is evaluated through the usage of resources in the economy; however no specific indicator is given to evaluate efficiency.

Business efficiency is the top concern for any enterprise and covers all activities, showing the quality of the overall enterprise management. Reality of operation in enterprises shows that all changes in management contents, methods and measures only truly count when they lead to improve business efficiency.

In the context of competition in the market economy and integration, to survive and grow, business activities must be efficient. The higher the business efficiency, more favorable conditions enterprises have to expand and develop production, create jobs, improve the life standard of employees, and contribute more to state budget. As a result, business efficiency of enterprises must be considered comprehensively in relation with the overall efficiency of the whole economy (economic and social efficiency).

2.2 Indicators of Business Efficiency

There are many indicators to measure business efficiency basing on book value, market value and social efficiency. For measuring business efficiency basing on market value, profitability is frequently used. It reflects the amount of profit generated by a unit of input of (the higher the numeric value of this indicator is, the higher the business efficiency is and vice versa).

Of various indicators for measuring business efficiency, the most frequently used ones can be divided into (i) book value coefficients (also called profit coefficients) and (ii) market value coefficients (also called as asset growth coefficients). According to Murphy and Hill (1996), business efficiency needs measuring through criteria in both aspects of book value and market value. Whatever aspect it is, business efficiency is reflected by the following basic indicators, as below:

+ *Return on sales (ROS)*: this indicator shows how much profit is generated for a unit of net revenue; the higher the numeric value of this indicator is, the higher the business efficiency is and vice versa.

+ *Return on assets (ROA)*: during its business operation, all enterprises wish to have profit; by comparing revenue with investment assets, we can see the profitability on assets.

In addition, there are other indicators to measure business efficiency, including: Price-to-Book Ratio (P/B), Tobin's Q Ratio (market value), Dividend yield ratio (DY). However, regarding the study's approach in this study about business efficiency of SMEs, we used ROA and ROS as representative indicators for measuring business efficiency because of the following reasons.

(i) in the approach of Shah & Jan (2014), Shahid (2003), and Le & Buck (2011), the indicators used for measuring business efficiency is Return on Equity (ROE) or Return on Investment (ROI). The usage of ROI or ROE is quite similar to that of ROA and ROS so ROA and ROS are appropriate determinants for determining how the capability of cost control affects business efficiency.

(ii) according to Behn (2003), business efficiency of a measurement variable can be influenced by business target, development of stock market and capital market. It is very difficult to evaluate SMEs' business efficiency using market value, business target, Tobin's Q Ratio or Price-to-Earnings Ratio (P/E) because most SMEs are not listed in the stock exchange; therefore there is no basis to identify these indicators and calculation is too difficult.

3. Research Methodology

3.1 Research Models

In analyzing business efficiency, we collected financial statements of SMEs. An important indicator for measuring business efficiency is profit. Under the accounting framework, business result is the difference among revenue, income and expenses of enterprises after a period of business operation of an entity. Business result is measured using the following formula:

Business result	=	Net revenue from sales and services	-	Cost of goods sold	+	Income from financial activities	-	Expenses for financial activities	+	Selling and administrative expenses
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Based on the formula above, we give hypotheses with the following impacting factors of business result, namely cost of goods sold ratio, financial expense ratio, administration expense ratio, firm size (revenue as a proxy), financial leverage and assets structure. Variables in the model for analyzing factors affecting business efficiency are presented in Table 3.

Table 3. Variables in the research model

Name	Type	Code	Measurement	Expected direction of impact
Pre-tax return on assets	Dependent	ROA	Earnings before tax/ Total assets	
Pre-tax return on sales ratio	Dependent	ROS	Earnings before tax/ Sales	
Cost of goods sold ratio	Independent	COGS	Cost of goods sold / Sales	-
Financial expenses ratio	Independent	EFFA	Financial expense/Total revenue	-
Administration expense ratio	Independent	GAAE	Administration expense /Total revenue	-
Financial leverage	Controlling	CAP	Debt/Total assets	-
Assets structure	Controlling	LAR	Long-term assets/Total assets	+
Revenue	Controlling	SIZE	Revenue	+

In this research, we use data in the balance sheets and income statements for identifying factors affecting business efficiency of SMEs as follows:

- *Cost factors*: Production cost is the deciding factor of efficiency for each activity at enterprises during each production cycle. It also decides competitiveness and sustainability. The efficiency of each activity is associated with the ability to control cost. On the other hand, expenses are frequently incurred in the production process and changed during the re-production process. Therefore, enterprises always aim at how to control cost in the most effective way. Bierstaker et al. (2006) pointed out that regular inspection of the internal control system, especially the accounting system, is the one popular method to prevent issues during operation. Despite its effectiveness, however, it is only applied by a very small number of enterprises, especially at SMEs due to the investment cost. The lack of applying such as highly effective methods leads to losses in resources/assets of enterprises. That is why this research proposed that SMEs should consider the long-term benefits and invest in the accounting system to control material misstatements. It also shows the quality of accounting information has impact on capital expenses of enterprises, both directly and indirectly. The disclosure of correct information affects the evaluation of relative impact of different cash flows in enterprises, causing direct impacts, and affects decisions about production and business as well as estimated rate of return and total absolute value of cash flows, causing indirect impacts. Impact can happen in one of two directions; however, they all lead to situations where the higher the quality of accounting is, the higher possibility of reducing capital cost is (Lambert et al., 2007). The issue to be considered is how the organization of accounting activities affects internal cost control and how internal cost control affects bookkeeping. Cost for production and business include cost of goods sold, business

administration expenses and financial expenses. According to the formula for calculating business efficiency, when expenses increase, efficiency decreases due to the negative relation between them.

- *Business size*: Baard & Van (2004), Ari & Fredrik (2004), Hansen (2002) found that firm size, among other factors, affects an enterprise's business efficiency.

- *Financial leverage*: Study of Zeitun & Tian (2007) showed that financial leverage affects efficiency of enterprises when efficiency is measured basing on book and market value. Margaritis & Psillaki (2007) found the relation between financial leverage and business efficiency.

- *Assets structure*: For enterprises that have assets structure with higher ratio of long-term assets compared to other enterprises in the same field, it is normal because they invest more in fixed assets; as a result they have better capability to produce products and services of higher quality and cheaper price, hence the higher business efficiency.

3.2 Research Data

Research data are collected from financial statements including balance sheet and income statement of SMEs in Thai Binh for the period from 2012 to 2014. According to Enterprise Law No. 60/2005/QH11, enterprises are required to provide annual reports to Tax Station and Statistical Department. There is also an official database of the statistical department in Thai Binh province. The scope of this paper includes SMEs in various fields and industries from 2012 to 2014. To match with international studies, this article does not include enterprises operating in the fields of banking, finance and insurance. There are 1,009 SMEs with dataset of operations for 3 consecutive years. The final selected sample includes 661 SMEs; those without adequate information or have outlier in variables are excluded from the sample. The total number of observations is 1,983 (661 enterprises x 3 years). Of 661 SMEs, 228 operates in the form of joint stock company and 443 operates in the form of limited company.

In this study, indicators employed to measure business efficiency are ROA and ROS with multi-year dataset for the period from 2012 to 2014. During this operation period, there were changed in the corporate income tax rate and of 661 SMEs in the study, many SMEs have negative earnings before tax. Therefore, to ensure comparison among the years, we used profits before tax to measure business efficiency of SMEs.

3.3 Data Analysis

Regression techniques are applied on panel data, including Pooled OLS regression model, Fixed Effect Model (FEM) and Random Effect Model (REM). After choosing the appropriate regression techniques for the research model, we verified the chosen model and evaluate its defects. In case of having defects that violate regression hypotheses, we would overcome them by using Generalized Least Squares (GLS) model.

4. Results and Discussion

Descriptive Statistics

According to statistical data in Table 4, the average ROS ratio is low at 0.236% and the average ROA ratio is - 0.997%. COGS, financial expense ratio and administration expenses ratio compared to revenue are 85.62%; 2.01% and 12.78%, respectively. The average financial leverage of SMEs (debt/total assets) is 54.55% while the average assets structure is 30.94%.

Table 4. Descriptive Analysis of Average Variables in 3 Years From 2012 to 2014

Indicators	Number of observation	Mean value	Standard deviation	Minimum value	Maximum value
Pre-tax Return on Sales ratio (ROS)	1,983	0.00236	0.042967	-0.51	0.53
Pre-tax Return on Assets ratio (ROA)	1,983	-0.00997	0.082342	-1.03	0.63
Cost Of Goods Sold ratio (COGS)	1,983	0.856273	0.144629	0.01	0.99
Financial Expenses ratio	1,983	0.020096	0.048498	0	0.89
Administration expense ratio (GAEE)	1,983	0.127761	0.143723	0.01	0.97
Financial leverage (CAP)	1,983	0.545522	0.262856	0.01	0.99
Assets structure (LAR)	1,983	0.309435	0.253342	0.01	0.99
Revenue (SIZE)	1,983	15.96471	1.704818	9.66	21.21

Impact of difference in business form on cost control

Data in Table 5 show that SMEs operating in the form of joint stock have higher efficiency measured by book value (ROS, ROA) than those operating in the form of limited liability company. However, there is only considerable difference regarding ROA ratio with 99% of reliability.

Table 5. Business efficiency according to business form of SMEs

Indicator	Business form	Number of observations	Mean	Bartlett's test	Pr
Pre-tax Return on Sales ratio (ROS)	Joint stock company	684	-0.00744	0.008	0.3334
	Limited company	1,299	-0.01131		
Pre-tax Return on Assets ratio (ROA)	Joint stock company	684	0.006433	0.000	0.0044
	Limited company	1,299	0.000216		

As mentioned above, another goal of this research is to check the capability of cost control of enterprises in the sample. Evaluation results about the capability of cost control in enterprises and descriptive statistics for all samples are presented in Table 6. We found out that enterprises operating in the form of joint stock firms have lower ratio of financial expenses/revenue than those operating in the form of limited liability firm while the ratio of administration expenses/revenue is higher with the level of significance of 5%. There is a

difference in the ratio of financial expenses/revenue between the two business forms, but not remarkable.

Table 6. Business efficiency under business forms of SMEs

Indicators	Business form	Number of observations	Mean	Bartlett's test	Pr
Cost Of Goods Sold ratio	Joint stock firm	684	0.843202	0.589	0.0035
	Limited firm	1299	0.863156		
Financial Expenses ratio (EFFA)	Joint stock firm	684	0.018714	0.000	0.3045
	Limited firm	1299	0.020824		
Administration expense ratio (GAAE)	Joint stock firm	684	0.137573	0.012	0.0158
	Limited firm	1299	0.122594		

Factors affecting business efficiency of SMEs

Table 7 shows results of correlation coefficient among variables. The purpose of checking close correlation between dependent and independent variables is to eliminate factors that can lead to multicollinearity before applying the regression model. Regarding the correlation coefficients of independent variables, no pair has the value over 0.8, except for the pair of COGS and GAAE variables with the coefficient of .8073. However, to test whether multicollinearity occurs when using the regression model, we employed variance inflation factor (VIF) for testing.

Table 7. Correlation matrix

	ROS	ROA	COGS	EFFA	GAAE	CAP	LAR	SIZE
ROS	1							
ROA	0.5616	1						
COGS	-0.079	-0.0925	1					
EFFA	-0.2631	-0.1113	-0.2211	1				
GAAE	-0.3178	-0.134	-0.8073	0.0315	1			
CAP	0.0357	-0.021	0.1659	0.1642	-0.226	1		
LAR	-0.033	-0.029	-0.182	0.1702	0.131	-0.1417	1	
SIZE	0.2188	0.1624	0.3986	-0.035	-0.506	0.4424	-0.0841	1

(i) Regression with dependent variable of ROS

For the dependent variable of ROS (Table 8), we compare and select the appropriate model among OLS, FEM, and REM. To do so, we employed F test and Hausman test. By using F test, it can be seen that $\text{Prob} > F = 0.000 < \alpha = 5\%$, therefore, with the level of significance of 5%, H_0 is eliminated. This means that, for the dataset, the FEM is appropriate while OLS model is not due to the existence of fixed effects of each enterprise overtime. After choosing

the FEM model instead of the OLS model, we begun to process data using FEM and REM. From the result of using FEM and REM, we applied Hausman test to compare and select between FEM and REM. Results of Hausman test are presented in Table 8. $\text{Prob} > \chi^2 = 0.000$ so $P_value = 0.000 < \alpha = 5\%$; it means there is sufficient basis to eliminate hypothesis H_0 and FEM is more suitable than REM. Through testing, FEM is chosen as the best one.

Table 8. Result of multivariate regression with the dependent variable of ROS

	OLS	FEM	REM	GLS
COGS	-0.707*** [-51.38]	-0.726*** [-34.12]	-0.709*** [-50.37]	-0.767*** [-86.18]
EFFA	-0.846*** [-33.86]	-0.876*** [-20.45]	-0.852*** [-32.87]	-0.859*** [-71.27]
GAAE	-0.733*** [-51.28]	-0.739*** [-35.60]	-0.736*** [-50.52]	-0.773*** [-86.43]
CAP	0.00491 [1.01]	-0.0005 [-0.05]	0.00467 [0.91]	0.00291*** [5.19]
LAR	-0.000233 [-0.05]	0.0247* [1.75]	0.00045 [0.09]	0.000809 [1.18]
SIZE	0.00202** [2.46]	0.0101*** [3.62]	0.00216** [2.46]	0.00172*** [16.91]
_cons	0.671*** [35.26]	0.555*** [11.18]	0.671*** [33.87]	0.737*** [82.36]
N	1983	1983	1983	1983
R-sq	0.645	0.6236	0.6454	
F test	F(6, 1976) = 599.48 Prob > F = 0.0000	F(6, 1316) = 343.85 Prob > F = 0.0000		
LM test			Wald $\chi^2(6) = 3509.79$ Prob > $\chi^2 = 0.0000$	Wald $\chi^2(6) = 8316.08$ Prob > $\chi^2 = 0.0000$
Hausman test		$\chi^2(6) = 16.43$ Prob > $\chi^2 = 0.0116$		
Modified Wald test		$\chi^2(661) = 1.7e+10$ Prob > $\chi^2 = 0.0000$		
Wooldridge test		F(1, 660) = 1.391 Prob > F = 0.2387		

Note. t statistics in brackets * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

However, before analyzing factors affecting ROS, we applied heteroscedasticity, multicollinearity, and autocorrelation tests as well as made necessary adjustment to overcome the model's shortcomings.

Heteroscedasticity test: to test if there is changing variance, we used Modified Wald test with hypotheses that H_0 : there is no change in variance, H_1 : changes in variance occur. Test results show that P-value is small (smaller than the 0.05 default value), hypothesis H_0 is rejected while hypothesis H_1 is accepted. In Table 8, $P_value < \alpha = 0.05$. According to test results of models, obtained P-values are all as follows: $0.000 < \alpha (5\%)$ which implies hypothesis H_0 (that there is no change in variance) is rejected with the level of significance of 5%. Therefore,

we eliminate the defects of regression model by using the GLS regression method.

Autocorrelation test: The Wooldridge test is used to test whether autocorrelation occurs in regression models with the hypotheses that: H_0 = no autocorrelation occurs; H_1 : autocorrelation occurs. If the test produces results of $P_value = 0.2387 > \alpha = 0.05$, hypothesis H_0 is accepted, meaning no autocorrelation occurs.

Multicollinearity test: to discover multicollinearity in the models, we employed Variance Inflation Factor (VIF). There are different proposed values of VIF but the most popular value is 10; if the value of VIF is higher than that limit, multicollinearity can occur (Hair et al., 1995). Results of VIF values for all variables are lower than 10, proving that multicollinearity does not occur.

Using GLS method: after applying regression, testing and choosing FEM as the appropriate model, we dealt with defects discovered in the model by using GLS method. Results presented in Table 8 are those in which the model's defects are handled.

According to Table 8, variables of COGS ratio, financial expense ratio, administration expense ratio, financial leverage, and firm size by revenue have statistical significance with 1% level of significance while the variable of assets structure does not affect business efficiency.

(ii) Regression with dependent variable of ROA

Regarding dependent variable of ROA, results of Hausman test are presented in Table 9. $P_value = 0.4378 > \alpha = 5\%$ so there is a sufficient basis to use REM. Through test results, FEM is chosen as the best model.

To test if there is change in variance, we implement Breusch and Pagan test. Test results show that obtained P-values are all as follows: $0.000 < \alpha (5\%)$. This implies hypothesis H_0 (that there is no change in variance) is rejected with the level of significance of 5%. Therefore, we eliminate the defects of regression model by using the GLS regression method.

In Table 9, variables of COGS ratio, financial expense ratio, administration expense ratio, financial leverage, and size according to revenue are statistically important with 1% level of significance.

From study results in Table 8 and Table 9, a number of discussions can be given as:

First, factors of COGS ratio, financial expense ratio, administration expense ratio all have negative relationship and statistical significance; they match with the initial hypothesis that when cost increases, profit decreases, leading to lower business efficiency. So cost factors are important factors with major impact on business efficiency, ROS, ROA of SMEs.

Second, the financial leverage factor has a positive relation with ROS but a negative relation with ROA and has 1% level of statistical significance. So there is a difference in relation between financial leverage and ROS, ROA; however, the level of impact of financial leverage is very small. Considering the impact of financial leverage on ROA, it matches with the hypothesis of the study; to put it differently, the higher the debt ratio is, the lower the business

efficiency of enterprises is. Result of this study are similar to those of Zeitun & Tian (2007) and Margaritis & Psillaki (2007).

Third, the factor of assets structure has a positive impact on ROS but with no statistical significance. Meanwhile, it has a negative relation with ROA but with 1% level of significance. This result contradicts with the initial hypothesis but the level of impact is insignificant. A possible reason is that SMEs invest in more fixed assets but do not utilize them effectively, leading to low business efficiency.

Table 9. Result of multivariate regression with the dependent variable of ROA

	OLS	FEM	REM	GLS
COGS	-0.211*** [-19.57]	-0.206*** [-13.02]	-0.709*** [-50.37]	-0.184*** [-35.60]
EFFA	-0.198*** [-10.13]	-0.153*** [-4.80]	-0.852*** [-32.87]	-0.173*** [-31.20]
GAAE	-0.191*** [-17.07]	-0.174*** [-11.28]	-0.736*** [-50.52]	-0.173*** [-33.27]
CAP	-0.0132*** [-3.50]	-0.0102 [-1.24]	0.00467 [0.9]	-0.00761*** [-13.10]
LAR	-0.00601* [-1.70]	-0.00569 [-0.54]	0.00045 [0.09]	-0.00216*** [-4.23]
SIZE	0.00370*** [5.77]	0.00342* [1.65]	0.00216** [2.46]	0.00216*** [17.83]
_cons	0.161*** [10.82]	0.156*** [4.25]	0.671*** [33.87]	0.155*** [29.06]
N	1983	1983	1983	1983
R-sq	0.2002	0.1982	0.2025	
F test	F(660, 1316) = 1.32 Prob > F = 0.0000	F(660, 1316) = 1.69 Prob > F = 0.0000		
LM test			Wald chi2(6) = 455.63 Prob > chi2 = 0.0000	Wald chi2(6) = 1550.91 Prob > chi2 = 0.0000
Hausman test		chi2(6) = 5.87 Prob > chi2 = 0.4378		
Breusch and Pagan Lagrangian		chibar2(01) = 68.25 Prob > chibar2 = 0.0000		
Wooldridge test		F(1, 660) = 0.070 Prob > F = 0.7916		

Note. t statistics in brackets * p<0.1, ** p<0.05, *** p<0.01.

Fourth, the factor of size by revenue produces positive regression results with 1% level of statistical significance; it affects business efficiency with ROS and ROA as measurement. This result matches with those of Baard & Van (2004), Kokko & Sjöholm (2004), Hansen et al. (2002).

The coefficient of R² according to ROS is 0.6234 and according to ROA is 0.2025. It means that factors in the research model only explain 62.34% the impact on business efficiency when measured by ROS and 22.25% when measured by ROA; the remaining percentage is

due to the fact that there are factors not included in the research model such as: capability, skill of director, provincial support policies. This is the shortcoming of this research, which will be further studied.

5. Conclusion and Recommendations

During the studied period, business efficiency of SMEs in Thai Binh was low and their average profits before tax were negative; there was no improvement in business efficiency of 2014 compared to 2013 and 2012. Through regression results, 6 factors affecting business efficiency of SMEs are identified. Impacting factors of cost control ability include COGS ratio, financial expense ratio, and administration expense ratio; they have negative impact business efficiency (ROS, ROA). In addition, the factors of financial leverage factor and assets structure also have negative impact business efficiency while revenue has a positive impact.

Based on study results, we propose a number of recommendations, as below:

First, there should be solutions to reduce cost such as having a rationalized and streamlined production process, improving labor productivity, cutting necessary cost in business and production. Enterprises need to consider building the effective internal control system, enhancing technology application in accounting for improving transparency and efficiency in providing reliable accounting information and data.

Second, SMEs should enhance competitiveness of products or services, have appropriate measures to increase revenue, and carry out researches on new products and services for meeting the market demand. Also, they should build and complete their management apparatus so increase cost control capability. When having sufficient conditions and goal, SMEs can consider switching to the form of joint stock firm.

Third, SMEs should choose capital resources with state and provincial assistance to reduce interest cost and increase the equity ratio during the business and production process.

Fourth, SMEs should utilize invested assets effectively, especially fixed assets. When implementing investment projects, they need to have feasible report about efficiency, capital mobilization and also should research areas that are prioritized for development by the government and province.

Last, state agencies in Thai Binh need to actively and effectively implement guidelines and policies issued in planning No. 59/KH-UBND in order to apply solutions into practice for SMEs in the provincial area.

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