Determinants of financial performance of listed firms manufacturing food products in Vietnam: regression analysis and Blinder–Oaxaca decomposition analysis

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Abstract

Purpose – This article studies the impact of micro and macro factors on firm performance in the context of an emerging economy just changed from a subsidized economy to a market economy.

Design/methodology/approach – The authors carried out an investigation into 30 listed food processing companies in Vietnam from 2014 to 2019. The data are analyzed by using STATA software. In this study, beside the regression analytical technique, the Blinder–Oaxaca decomposition analysis is used to study more deeply the effect of variables on financial performance of food processing companies, so its results are reliable base to give suggestions.

Findings – The results of empirical research help us to have some following conclusion. First, two variables consisting of total assets turnover ratio (ATR) and growth in sales significantly influence financial performance, when it is measured by return on equity (ROE) or return on sales (ROS). Second, leverage significantly negatively impacts return on sale. Third, there are difference in financial performance and the effect of predictors on dependent variable "ROS" between state-owned enterprises (SOEs) and non SOEs, and the causes come from the component effect.

Originality/value – In fact, although a range of previous researches on that topic have been carried out, none of them dig deeper reasons resulting to the differences in financial performance between SOEs and non SOEs, whereas Vietnamese economy has just changed to a market economy since 1986, making impacts of State ownership totally different from other countries. In this study, the authors use the *t*-test and analysis to have more accurate conclusions about that problem.

Keywords Firms manufacturing food products, Regression analysis, Blinder–Oaxaca decomposition analysis

Paper type Research paper

1. Introduction

Always does the high financial performance draw main attention from every manager, because it plays a vital position within the structure and development of a firm, however, that aim is often challenged by many factors, leading to a low level of firm performance. Studying

determinants of financial performance is getting necessary to companies in Vietnam, especially food processing firms, because their business results are not good, meanwhile, there are a lot of advantages of macro economy and many priorities given to them. In addition, the influence of State ownership needs to be studied more carefully, because the Vietnamese economy has just changed from a subsidized economy to a market economy since 1986, making the impact of state ownership totally different from other countries. Actually, a range of researches on that topic have been carried out, but none of them dig deeper reasons resulting to the differences in financial performance between state-owned enterprises (SOEs) and non SOEs. In our study, beside focusing on the impact of some micro and macro factor on firm financial performance in food processing industry, we use the *t*-test and Blinder–Oaxaca analysis to assess the impact of State ownership on the companies, helping us to have more accurate conclusions about the impact of factors in research model and get a more reliable basis for proposing solutions for food manufacturing companies.

2. Literature review and hypothesis development

2.1 Financial performance

Firm financial performance is used as a tool measuring an organization current development and potential growth. Although there are many indicators estimating financial performance, the choice of appropriate ratios depends on the characteristics of studied objects and study purposes. In studies, ROE and ROS are two of the most used ratios to measure financial performance (Walsh, 1987). For example, Waddock and Graves (1997) used ROA, ROE and ROS to measure the company's financial performance, whereas Ruf *et al.* (2001) selected ROE, ROS and growth in sales in the study of the determinants of financial performance. Margarita (2004) has measured financial performance based on ROA, ROE and ROS to study the relationship between social responsibility and corporate financial performance. Mara and Nicoleta (2019) used ROE to evaluate financial performance of studied companies. Many researchers agree that the use of those financial ratios give them valuable information of firm financial performance. While ROE shows the efficiency of equity, ROS reflects the effectiveness of the company's cost management. In other words, one ratio refers the capacity to use the capital (input of capital), the other refers to the ability to manage the operating cost (output of capital). Therefore, the use of these two financial indicators will help researchers to have more comprehensive conclusions about the financial performance of enterprises.

2.2 State ownership

Relating to this matter, some researchers spend attention on the influence of the existing state ownership on financial performance. Although there are a lot of researches on that issue, the conclusion of its influence is still argued. On the one hand, some researchers agree that state ownership is considered as a "helping hand" that could provide an abundance of capital, thereby improve firm financial performance. On the other hand, many people describe it as "grabbing hand" which assumes that firm's profit could be more extracted to some politician purposes (Tian and Estrin, 2008). Theoretically, in the property rights perspective in economics (Martin and Parker, 1997; Villalonga, 2000) and the residual claimant theory (Rowthorn and Chang, 1993), economists indicate the public ownership inefficiency. Empirically, Jiang *et al.* (2013) show that for SOEs firm, their characteristics can predict external successions, but for non SOEs. Qi *et al.* (2000) indicate that the performance of public SOEs firms could be influenced by the ownership structure and relative control by either the state or legal-person shareholdings. Sun *et al.* (2002) prove that a concave N-shape can reflect the relationship between government ownership and firm performance in both highly state controlled firms and very low state owned or privatized firms.

H1. State ownership influences firm financial performance.

2.3 Quick ratio

According to Van Horne and Wachowicz (2005), ratios measuring liquidity is a tool to help analysts determine the company's ability to fulfill short-term financial obligations. Owolabi and Obida (2012) indicate that "liquidity" has a crucial position in the success of a firm, because the failure to meet its obligation in due time could lead to a low credit rating by the creditors, decrease in the value of growth in the market and finally a reduction in capacity to have more capital in the future. Meanwhile, the capital is the core of a good financial performance. Therefore, factor of liquidity plays an important role in working capital management (Sanna and Sandra, 2009), and the influence of has to be carefully considered. Many researchers such as Adams and Buckle (2003), Fazzari *et al.* (1988), Hu and Michael (2006), Zahra and Azam (2012), Victor *et al.* (2013) found the significant positive influence of liquidity on financial performance.

There is a rage of financial ratios to measure the corporate liquidity, and the choice of appropriate ratio depends on the characteristics of studied objects. For companies having a large amount of short-term debt like food processing firms, the quick ratio (QR) is commonly used. The study of Seema *et al.* (2011) increase in QR brought a strong impact on financial performance.

H2. Quick ratio influences firm financial performance.

2.4 Total assets turnover ratio

According to Stephen *et al.* (2010), this ratio helps managers know how efficient they are in using company assets to generate sales. Theatrically, a high total assets turnover partly shows some potential developments of a company relating to increasing its sales, expanding its market share, finally, improving its financial performance. Empirically, Wu and Zhu (2010) analyze empirically the factors affecting business performance of listed agricultural enterprises. Research results show a significant positive relationship between the ratio of financial performance and total asset turnover of firms. Seema *et al.* (2011) evaluates corporate performance by using total asset turnover, long-term asset turnover and short-term asset turnover. The authors point out that low turnover is a sign of ineffective use of available resources and that the company has not fully exploited its capacity or assets. Similarly, Dinh and Sha (2011) use total asset turnover to evaluate business results of enterprises. Analysts conclude that the higher the efficiency of assets use, the better the company's operating efficiency.

H3. Total assets turnover ratio influences firm financial performance.

2.5 Leverage

Leverage indicates the level of the debt. It is directly related to the capital used in a company, so it is an issue interested by many people like managers, shareholders, investors, creditors. Therefore, there have been researches carried out to identify the influence of that variable on financial performance of a company, but there is not the final conclusion to that problem. Some researchers such as Asimakopoulos *et al.* (2009) and Al-Jafari and Samman (2015) found that leverage is negatively correlated to financial performance; the reason is that high debt requires more resources to pay the debt. However, others like Burja (2011), Humera *et al.* (2011) argue that additional debt can be implemented in a good investment, which will increase financial performance.

H4. Leverage influences firm financial performance.

2.6 Firm size

Firm size could influence its financial performance in many ways. A larger company could more affect its current and potential investors, creditors, its stakeholders, even its consumers.

That is proved by the high business performance of conglomerates and multinational corporations in global economy. As a consequence, firm size is considered as a determinant of financial performance by many researchers. However, there are various result of the effect between firm size and financial performance. Stierwald (2009), Vijayakumar (2011), Ayele (2012), Erasmus (2013) found a positive influences between firm size and financial performance. While Dhawan (2001), Ramasamy (2005), Salman and Yazdanfar (2012) found that firm size have a negative effect to the financial performance.

H5. A firm's size influences its financial performance.

2.7 Growth in sales
According Deitiana (2011), high growth in sales is one of signs of a firm business success in the past, and it could be used as a tool to predict the development in the future. It partly shows that the capacity of the company to expand the market share or launch new products. In addition, that good ratio also helps the firm to interest more investors. Therefore, there have been also numerous researches in the influence of that variable on firm financial performance, and many of them like studies done by Krishnan and Moyer (1997), Zeitun and Tian (2007), Liu (2010) and Yazdanfar (2013) found a positive and significant relationship between firm growth and performance.

H6. Growth in sales influences firm financial performance.

2.8 Consumer price index
In this study, the consumer price index (CPI) is selected to represent the group of macro factors, because one of characteristics of food processing industry is to be strongly influenced by the change in price and inflation. Although there have been a range of researches on the influence of this factor on firm financial performance, their finding is different from each other. The studies of Demirguc-Kunt and Maksimovic (1999), Booth *et al.* (2001) show that the increase of CPI can lead to the decrease of the use of debt in enterprises, and reducing the degree of debt is able to make the company's business performance increased. Meanwhile, Deng *et al.* (2009), point out that as the CPI increases, companies will find that many of the benefits of using financial leverage diminish, which makes many managers hesitate to use debt to finance your business.

H7. Consumer price index influences firm financial performance.

3. Data and methodology
3.1 Variables measurement
(see Table 1)

3.2 Data
The study is analytical in nature and involved testing of hypotheses quantitatively. The main content of this research approach is to find out a concise answer to the research questions through the collection and analysis of information of firms. In order to evaluate the influence of independent variables on financial performance of food processing companies, thirty listed Vietnamese companies manufacturing food products are selected. For the purpose of completing research goals, dataset has to meet some requirements including: 30 selected companies must have been in business before 2014; there is no disruption in their business operation; dataset has both SMEs and non-SMEs. The study is mainly based on secondary financial data including income statements, balance sheets and cash flow statements for period of 2014–2019. This offered an improved understanding of the links existing among the variables.

Variable	Measurement	Scale
Dependent variable (Y)		
ROE	Net income	Ratio
	Average Shareholder's Equity	
ROS	Operating profit	Ratio
	Net sales	
Independent variables (X)		
Quick ratio (QR)	Current assets-Inventory	Ratio
	Current liabilities	
Total assets turnover ratio (ATR)	Sales	Ratio
	Total assets	
Leverage (LEV)	Total liabilities	Ratio
	Total assets	
Firm size (Size)	Log of Total Assets	Ratio
Growth in sales (GROWTH)	$(Sales_t - Sales_{t-1})$	Ratio
	$Sales_{t-1}$	
CPI	Consumer price index	Ratio

Table 1.
Variables

3.3 Research method

3.3.1 Empirical model of estimation. My basic panel model is in the form:

$$Y_{it} = \beta_0 + \beta_i X_{i,t} + \mu_{i,t}$$

where β_0 is a constant, $X_{i,t}$ is a K-dimensional vector of explanatory variables and $\mu_{i,t}$ is the error term which is further decomposed into the following disturbance terms:

$$\mu_{i,t} = \alpha_i + \varepsilon_{i,t}$$

Where α_i is individual firm effects and it is constant over the time and $\varepsilon_{i,t}$ is error.

Following the works of…. with modifications, we modeled our study as follows:

$$\text{Model 1}: \text{ROE}_{i,t}$$

$$= \beta_0 + \beta_1 QR + \beta_2 ATR_{i,t} + \beta_3 LEV_{i,t} + \beta_4 GROWTH_{i,t} + \beta_5 Size_{i,t} + \beta_6 CPI_{i,t} + \alpha_i$$

$$+ \varepsilon_{i,t}$$

$$\text{Model 2}: \text{ROS}_{i,t}$$

$$= \beta_0 + \beta_1 QR + \beta_2 ATR_{i,t} + \beta_3 LEV_{i,t} + \beta_4 GROWTH_{i,t} + \beta_5 Size_{i,t} + \beta_6 CPI_{i,t} + \alpha_i$$

$$+ \varepsilon_{i,t}$$

Where: ROS is return on sales, ROE is return on equity, QR is quick ratio, ATR is total assets turnover ratio, LEV is leverage, GROWTH is growth in sales, Size is firm size and CPI is consumer price index, and ε is error.

3.3.2 Research method. Data processing technique include calculating data analysis model, which is assisted by STATA version 14. In this research, the regression analytical technique is used to find out the influence of firm determinants on financial performance. In addition, the Blinder–Oaxaca decomposition analysis is carried out to study the causes of the difference in financial performance between SMEs and non-SMEs, thereby, its results are reliable base to give suggestions. First, we use the *t*-test to assess the impact of state

ownership on the companies, if the results show that there is difference in financial performance of SOEs and non SOEs, Oaxaca–Blinder decomposition analysis is necessary and meaningful. Second, we determine the fit model (Chow test, Breusch and Pagan Lagrangian multiplier test and Hausman test are used to help us to choose appropriate model for research sample). Third, the Wald test and Wooldridge test are used to check the existence of heteroskedasticity and the autocorrelation problem, if there are both issues, the Cluster regression will be carried out. On the other hand, if only the heteroskedasticity exists, robust standard error estimation will be used. Finally, if there is a difference in financial performance between the two groups of food processing companies, we will use decomposition analysis techniques to find causes of the difference.

4. Empirical results

4.1 Panel unit root test
In order to test the stationariness of the data, first, panel unit root test was carried out. When time series do not have unit roots or they are stationary, results generated from such series normally tend to be better and hence do not lead to inconsistent outcomes. There are a number of unit root panel tests (Harris and Tzavalis, 1999; Im *et al.*, 2003 and Levin *et al.*, 2002), and the Levin-Lin-Chu test was chosen to examine whether our series are contain unit root. The null hypothesis is that the series contain a unit root and the alternative is that the series is stationary.

From our results as presented in Table 2, it is realized that eight variables including ROE, ROS, QR, total ATR, leverage (LEV), firm size (Size), growth in sale (GROWTH) and CPI are stationary at level hence have no unit roots. Thus, we obtain all our series to be stationary as we reject the null hypotheses that the series are non-stationary.

4.2 Descriptive statistics
With the data from the financial statements of listed companies manufacturing food products in Vietnam, some ratios are calculated

Table 2 shows that the average ROE of the surveyed companies is 12.85%. Although that result is greater than 0, according to many researchers, a company's ROE should be at least 15% to ensure the company's financial capacity and helps it become more interesting to investors. Meanwhile, their financial ratio of mean ROS is 5.1%, it is an acceptable result, but in a period of strong growth of the economy, that level is expected to be at least 10%, so it is not appreciated, especially when the food processing industry has received a lot of priorities from the Government and it is considered as the spearhead economic sector. In addition, there is a big gap between lowest and highest value, revealing the large difference in financial performance among firms. On the other hand, remaining financials ratios demonstrated

Variable	Obs	Mean	Std. Dev.	Min	Max	Status
ROE	180	0.1285131	0.0879535	0.0021463	0.3059481	Level
ROS	180	0.0513967	0.0436983	0.0006982	0.1527116	Level
QR	180	1.213155	0.8356104	0.2893399	3.220861	Level
ATR	180	1.558767	0.845108	0.5343837	3.608985	Level
LEV	180	0.4798448	0.1965424	0.119112	0.7776923	Level
Size	180	27.56639	1.205318	25.69325	29.81456	Level
GROWTH	180	0.1028449	0.260647	−0.2648557	0.8169564	Level
CPI	180	0.0287267	0.0111354	0.0063	0.0408	Level

Table 2.
Descriptive statistics

Note(s): (Result from Stata 14)

partly their operations that enormously different from each other. Based on those numbers, we can first conclude that the business performance of some companies in the food processing industry in Vietnam is not appreciated between 2014 and 2019, despite the fact that the economy of Vietnam developed rather well in the studied period with the gross domestic products rate rising from 3.78% to 9.58% [1]. In other words, there were firms that did not take advantage of the development of the economy, indicating a need of finding out factors impacting on financial performance of listed Vietnamese food processing companies and demand of reasonable measures suggested in order to improve their business results.

4.3 Correlation analysis
Table 3 shows the strength and direction of the relationship between variables which is examined. Correlation is significant at the 0.05 level between the ROS on one side and QR, total ATR, leverage, firm size and growth in sale on the other side. On the other hand, there is also significant correlation between ROE and some variables including total ATR, leverage and growth in sales.

4.4 Checking for multicollinearity
Table 4 shows that there is a perfect linear relationship between firm size and leverage. The measure used in the article is to remove the variable "Size" from our model.

According to the results (Table 5), after variable "Size" removed, it can be concluded that there is no multicollinearity problem in this model.

4.5 Result of t-test
In the 1st model, the result calculated by Stata 14 shows that $\Pr(|T| > |t|)$ is equal 0.1810, so the null hypothesis is accepted. In other words, the financial performance (measured by ROE) of SOEs and non SOEs is the same with each other, and the Oaxaca–Blinder decomposition analysis is not necessary.

Meanwhile, in the 2nd model, the value of $\Pr(|T| > |t|)$ calculated by Stata 14 is equal 0.0015, so the null hypothesis is rejected, it means that there is difference in financial performance (measured by ROS) between two groups of companies, and the Oaxaca–Blinder decomposition analysis is necessary and meaningful.

As can be seen from Table 6, mean ROS of SOEs is lower than that of non SOEs, revealing the higher financial performance of companies in group 1.

4.6 Discussion of regression results
4.6.1 Model 1. First, the decision whether to use the simple ordinary least square (OLS) or fixed effect panel data regression is based on the Chow test. The results show that fixed effect is appropriate for surveyed enterprises, because the *p*-value (0.0000) is less than 0.05. Second, the result of Breusch and Pagan Lagrangian multiplier test shows that the *p*-value is 0.0000, so random effect panel data regression is more suitable for research sample than OLS. Third, the selection of one model from random effect and fixed effect options is based on the Hausman test. The Hausman test result for 30 listed Vietnamese food processing companies indicates the use of random effect model is better because *p*-value is more than 0.05. On the other hand, the Wald test indicates that there is the heteroskedasticity problem in the model and Wooldridge test shows the existence of autocorrelation in panel data, so Cluster regression is used to solve those problems. Based on the results reported in Table 7, two independent variables significantly influencing the financial performance of companies are total ATR and growth in sales, and both their impact is positive.

	ROS	ROE	QR	ATR	LEV	Size	GROWTH	CPI
ROS	1.0000							
ROE	0.621 (0.0000)	1.0000						
QR	0.2685 (0.0003)	0.1122 (0.1338)	1.0000					
ATR	−0.3148 (0.0000)	0.3305 (0.0000)	0.118 (0.1147)	1.0000				
LEV	−0.3222 (0.0000)	−0.1366 (0.0674)	−0.7358 (0.0000)	−0.2061 (0.0055)	1.0000			
Size	0.1579 (0.0343)	−0.0837 (0.2642)	−0.3705 (0.0000)	−0.528 (0.0000)	0.3647 (0.0000)	1.0000		
GROWTH	0.2408 (0.0011)	0.2348 (0.0015)	0.0244 (0.7451)	−0.0915 (0.222)	0.1146 (0.1254)	0.2249 (0.0024)	1.0000	
CPI	0.0174 (0.8165)	0.0135 (0.8577)	−0.0414 (0.5814)	−0.0092 (0.9019)	0.0218 (0.7719)	0.0078 (0.9177)	−0.0556 (0.4584)	1.0000

Note(s): (Result from Stata 14)

Table 3.
Correlation matrix

| Variable | ROS | | ROE | |
	VIF	1/VIF	VIF	1/VIF
Size	38.84	0.025749	38.84	0.025749
LEV	15.91	0.062853	15.91	0.062853
CPI	7.68	0.130283	7.68	0.130283
QR	6.29	0.159053	6.29	0.159053
ATR	4.24	0.235797	4.24	0.235797
GROWTH	1.21	0.827725	1.21	0.827725
Mean VIF	12.36		12.36	
Note(s): (Result from Stata 14)				

Table 4.
VIF result

| Variable | ROS | | ROE | |
	VIF	1/VIF	VIF	1/VIF
CPI	6.46	0.154786	6.46	0.154786
LEV	4.91	0.203861	4.91	0.203861
ATR	3.92	0.254983	3.92	0.254983
QR	3.04	0.328739	3.04	0.328739
GROWTH	1.21	0.827733	1.21	0.827733
Mean VIF	3.91		3.91	
Note(s): (Result from Stata 14)				

Table 5.
VIF result after
removing
variable "Size"

Group	Mean	Std. Err.	Std. Dev.	[95% Conf.	Interval
0	0.0592052	0.0044033	0.0470149	0.0504814	0.0679291
1	0.0379091	0.0041272	0.0335296	0.0296665	0.0461517
combined	0.0513967	0.0032571	0.0436983	0.0449695	0.0578239
diff	0.0212961	0.0065872		0.008297	0.0342952
Note(s): (Result from Stata 14), Group 1: Non SOEs, Group 2: SOEs					

Table 6.
T-test result for ROS

4.6.2 Model 2. 4.6.2.1 Result of regression for whole research sample. Similar to the 1st model, in the 2nd model, the results of Chow test, Breusch and Pagan Lagrangian multiplier test and Hausman tests indicate that random effect regression is appropriate to the research sample. The Wald test and Wooldridge test also shows the existence of heteroskedasticity and the autocorrelation problem, so Cluster regression is used to give us more exact results. Based on numbers in Table 8, we can conclude that when the financial performance is measured by ROS, it is significantly affected by three predictors including total ATR, leverage and growth in sales. While ATR and LEV negatively impact the dependent variable at the 0.01 level, the variable "GROWTH" positively influences financial ratio ROS at the 0.1 level.

4.6.2.2 Result of regression for two groups of companies. The results reported in Table 9 shows a lot of differences between two groups companies. For sample of non SOEs, a series of tests lead to the fact that random effect regression is the most suitable, but both heteroskedasticity and the autocorrelation problem exist. According to the result of Cluster regression, there are two variables that significantly negatively impact the financial performance of the group 1 at the 0.01 level, including total ATR. Meanwhile, it is fixed effect regression that is the most appropriate for sample of SOEs, and there is only heteroskedasticity problem in this model. However, the result of robust Standard errors

ROE	OLS Coef.	FEM Coef.	REM Coef.	REM Robust Coef.
QR	0.0045066 (0.0092683)	0.0063624 (0.0098093)	0.0045066 (0.0092683)	0.0045066 (0.0110358)
ATR	0.0301301*** (0.0109523)	0.0268274* (0.0155219)	0.0301301*** (0.0109523)	0.0301301*** (0.0097754)
LEV	−0.0652515 (0.0463969)	−0.0842495 (0.053556)	−0.0652515 (0.0463969)	−0.0652515 (0.0409551)
GROWTH	0.054719*** (0.018269)	0.0502131** (0.0197643)	0.054719*** (0.018269)	0.054719* (0.0288243)
CPI	0.2376722 (0.3346483)	0.2425443 (0.3354469)	0.2376722 (0.3346483)	0.2376722 (0.269094)
_cons	0.0949355** (0.040435)	0.1072719** (0.0466182)	0.0949355*** (0.040435)	0.0949355*** (0.0342239)

Note(s): (Standard errors in parentheses ***$p < 0.01$, **$p < 0.05$, *$p < 0.1$), (Result from Stata 14)

Table 7.
Regression results

| ROS | OLS Coef. | FEM Coef. | REM | |
			Coef.	Robust Coef.
QR	0.0000956 (0.0043494)	0.0002611 (0.0046292)	0.0000956	0.0000956
			0.0043494	0.0051458
ATR	−0.018808*** (0.0050115)	−0.0157965** (0.0073252)	−0.018808*** (0.0050115)	−0.018808*** (0.0048425)
LEV	−0.0934176*** (0.0216158)	−0.0900579*** (0.0252744)	−0.0934176*** (0.0216158)	−0.0934176*** (0.0290719)
GROWTH	0.0221576** (0.0085746)	0.0169143* (0.0093273)	0.0221576** (0.0085746)	0.0221576* (0.0116121)
CPI	0.1201549 (0.1580613)	0.1146674 (0.1583059)	0.1201549 (0.1580613)	0.1201549 (0.1223086)
_cons	0.1196935*** (0.0187191)	0.1138832*** (0.0220003)	0.1196935*** (0.0187191)	0.1196935*** (0.023531)

Note(s): (Standard errors in parentheses ***$p < 0.01$, **$p < 0.05$, *$p < 0.1$), (Result from Stata 14)

Table 8.
Regression results

ROS	Group 1 REM		Group 2 FEM	
	Coef.	Robust Coef.	Coef.	Robust Coef.
QR	−0.0050405 (0.0079738)	−0.0050405 (0.0115883)	0.0026955 (0.0026327)	0.0026955 (0.0029972)
ATR	−0.0216806** (0.0084735)	−0.0216806*** (0.0071587)	0.0005427 (0.0059127)	0.0005427 (0.0058503)
LEV	−0.1192071*** (0.0342752)	−0.1192071*** (0.0447151)	−0.0354882* (0.0183169)	−0.0354882 (0.0202018)
GROWTH	0.0228557** (0.0115846)	0.0228557 (0.0157845)	0.0106613 (0.0105932)	0.0106613 (0.0161554)
CPI	0.2258627 (0.2386026)	0.2258627 (0.1948381)	−0.0354776 (0.1155885)	−0.0354776 (0.0974034)
_cons	0.1417792*** (0.0290746)	0.1417792*** (0.0327218)	0.0489333** (0.0191433)	0.0489333** (0.0194057)
Note(s): (Standard errors in parentheses ***$p < 0.01$, **$p < 0.05$, *$p < 0.1$), (Result from Stata 14), Group 1: Non SOEs, Group 2: SOEs				

Table 9.
Regression results

estimation indicates that there is not any predictor significantly influencing the financial performance of the group 2.

4.6.2.3 Blinder–Oaxaca decomposition analysis. In order to study the difference in financial performance and the effect of micro and macro variables on financial performance between SOEs and non SOEs, we conduct decomposition analysis. This method was first built and developed by Blinder (1973) and Oaxaca (1973) with the aim of finding out why race and sex lead to wage gap between groups. Later, it was used in other research areas including corporate finance. In that analytical technique, the difference of the comparing groups is separated into two components:

(1) The first one called "explained" or "Component effect" is caused by the differences in average observable characteristics of the individuals;

(2) The second part called "unexplained" or "Structure effect" is not the result of group differences in the predictors, it is usually attributed to discrimination.

In this study, not only is the total decomposition of the outcome differential into an explained and an unexplained part, but also the detailed contributions of the single predictors are subject to investigation.

The results reported in Table 10 show that the difference between the two groups is mainly explained by the composition effect, of which three variables including ATR, LEV and GROWTH contribute significantly to the difference. However, their coefficient also indicates that it is the variable "ATR" that could create largest gap between group 1 and group 2. Meanwhile, regarding unexplained component, only predictor "QR" significantly affects the difference in financial performance of non SOEs and SOEs.

ROS	Coef.	Robust Std. Err.	p-value
Differential			
Group_1	0.0592052	0.0043979	0.0000
Group_2	0.0379091	0.0041187	0.0000
Difference	0.0212961	0.0060253	0.0000
Explained			
QR	0.000211	0.0010592	0.8420
ATR	*0.0179952*	*0.0037324*	*0.0000*
LEV	*−0.0090144*	*0.0036208*	*0.0130*
GROWTH	*0.0054453*	*0.0021232*	*0.0100*
CPI	−5.03E-19	0.0002507	1.0000
Total	*0.0146371*	*0.0049752*	*0.003*
Unexplained			
QR	*−0.0202942*	*0.0121285*	*0.0940*
ATR	−0.0023594	0.011267	0.8340
LEV	−0.0200372	0.0177301	0.2580
GROWTH	−0.0014945	0.0012648	0.2370
CPI	0.0106685	0.0103061	0.3010
_cons	0.0401758	0.0339565	0.2370
Total	*0.006659*	*0.0059188*	*0.261*

Note(s): (Result from Stata 14), Group 1: Non SOEs, Group 2: SOEs
The variables in italics are the variables that cause the significant difference in financial performance between the two groups of companies

Table 10.
Blinder–Oaxaca
decomposition

5. Discussion and conclusion

Companies manufacturing food products play an important role in the Vietnamese economy, but the financial performance of firms in this industry is not as high as the expectation, therefore, studying determinants of their financial performance is a necessary activity. By using the data of 30 listed food processing companies in Vietnam, we have some following conclusions

First, two variables consisting of total ATR and growth in sales significantly influence financial performance when it is measured by ROE or ROS. However, while GROWTH influences positively both ROE and ROS, the impact of ATR on ROE is in contrast to that on ROS. Those results are reasonable for companies manufacturing food products. For that industry, solutions to increase growth in sale are used by numerous leaders, because the profit on each product is rather low, so increasing sales can help companies ensure their financial performance. In addition, consumers are affected a lot by their buying habits, therefore, managers often want to capture the largest market share as soon as possible to avoid huge costs and losses in the future. Regarding the impact of ATR, its negative effect on ROS can be understood due to the economic nature of these two financial ratios, whereas its positive influence on ROE reveals a fact that for food processing companies, the efficiency of the use of capital is able to change the ROE. In fact, it is a big effort of these firms in the studied period, due to the erratic weather from 2014 to 2019, raw material prices were not stable, and one of their characteristics is their preference for short-term debt, resulting to difficulties on controlling many kinds of costs. Though, these obstacles did not seem to be difficult to them, and the increase in ATR still leads to ROE enhanced. However, empirical results evoke following point, depending on the goals of company, measures for ATR should be be carefully considered. If the finance director pursues the goal of improving capital efficiency, policies to increase ATR should be applied. By contrast, if the company wants to show that it is highly effective to increase sales to capture market share, solutions to decrease that ratio could be more appropriate.

Second, leverage significantly negatively impacts return on sale of firm, so when leaders want to enhance ROS, controlling the use of debt could minimize the financial cost and help them to reach their business aim. The effect of leverage can be explained by their misuse of debt. Due to the short production cycle of food products, many businesses depend heavily on debt, leading to high financial costs, which is particularly not beneficial during a period of many fluctuations in raw material prices and interest.

Third, there are differences in financial performance and the effect of predictors on dependent variable "ROS" between SOEs and non SOEs, the financial performance of companies in group 1 (non SOEs) is higher than that of group 2 (SOEs). In fact, the result is reasonable, because until now, the management activities of SOEs, especially in the financial sector have not been good, and bureaucratic and subsidized ideology still exists in the leadership, leading to an negative impact on business performance. While ATR and LEV have the significant impact on financial performance of companies in the group 1, no predictor in the model significantly influences that performance of companies in the group 2. The causes that are identified by decomposition analysis come from the component effect, where variables including ATR, LEV and GROWTH contribute significantly to this difference. As a result, depending on the level of State ownership of each firm, managers should consider suitable solutions to improve its financial performance.

Note

1. Data of World Bank

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