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Factors Influencing the Profitability of Listed Firms in Vietnam's Stock Markets

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Abstract

The agricultural sector has an important contribution to the economic development of Vietnam in particular and other countries in general. The growth of enterprises in the industry is an important bridge in promoting the economic development of the country. Currently, the policies of the Government of Vietnam always create favorable conditions for enterprises to conduct business, especially enterprises in the agricultural sector. The study aims to assess factors influencing the profitability of listed firms in Vietnam's stock market. Using 40 enterprises in the agricultural industry listed on the Ho Chi Minh City Stock Exchange and the Hanoi Stock Exchange and using advanced econometric modeling, dealing with defects in the regression model, the research results show that large-scale firm has higher economic efficiency than small-scale firm. In addition, a firm with higher use of loan capital is associated with a more efficient firm, reflected in the relatively good debt management ability of enterprises in the agricultural sector. Adversely, growth and age do not have any impact on firm performance. Macroeconomic factors do not impact profitability. Finally, the study has some policy implications for developing agricultural businesses in the case of Vietnam.

Keywords: Firm Profitability, Firm Performance, Agriculture, Stock Market, Vietnam

JEL Classification Code: G53, G58, G54

1. Introduction

The agricultural sector plays an important role in the economic development of Vietnam. Starting from a purely agricultural country, Vietnam is gradually shifting its economic structure to the trend of trade and services. However, the contribution of the agricultural sector is still important in Vietnam's economy. Agriculture plays a great role in providing food for society; provides inputs in the production process; participates in export activities to earn foreign currency for the country.

Vietnamese agricultural products make many contributions to the country's exports, Vietnamese agricultural

products are capable of being exported to hundreds of countries around the world, especially to China and ASEAN countries. According to the 2021 industrial industry report, the revenue of the global agricultural industry significantly continues to grow at a compound rate of 5.2% per year from the period of 2016–2021. The size of the global agricultural market continues to grow strongly due to the strong increase in demand for agricultural products in China and India, especially in Africa. Therefore, exporting agricultural products continues to bring many opportunities for workers, and increase profits, especially food exports, which bring a large source of foreign currency to the country, improve living standards and stabilize the political situation. In addition, the agricultural industry plays a vital role in the industrialization of many countries and is often associated with the early stages of economic development.

In Vietnam, the agricultural industry is also one of the key industries that are always focused on development. According to Tuoitre (2022), the total export turnover of agricultural, forestry, and fishery products in the first 6 months of 2022 reached 27.88 billion USD, up 13.9% over the same period in 2021, of which the US, China, and Japan are the markets

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to buy agricultural products. Accordingly, the main group of agricultural products is USD 11.37 billion (up 8.8%), main forest products USD 9.1 billion (up 3%), aquatic products USD 5.8 billion (up 40.8%), livestock farming \$ 176 million (down 15.9%), input production \$ 1.42 billion (up 64.8%). Notably, due to the expanding export market with up to 9 products, the group of products with high export value and reached over 1 billion USD includes coffee, rubber, cashew, vegetables, rice, pangasius, shrimp, wood products, inputs for production. It meant that the agricultural industry has been shown more important nowadays.

To contribute to the development of the agricultural industry, enterprises in the industry play an important role in production, trade, and crop productivity and quality improvement (Nguyen, 2020). Many enterprises in the industry have grown up and listed their shares on the stock exchange, thereby demonstrating their positive contributions to the agricultural industry. To become more efficient, enterprises in the industry must also be efficient in their business operations, so that they can contribute more to the development of the agricultural sector. In addition, Vietnam's participation in the Comprehensive and Progressive Agreement for Trans-Pacific Partnership will be a great opportunity for Vietnam to boost the export of goods to the markets of member countries, in which the agricultural industry is one of the key industries and is expected to have many development prospects. Furthermore, the US-China trade war is expected to create good opportunities for markets other than China, such as Vietnam. Besides the opportunities that Vietnam's agricultural industry can seize, the industry also faces many challenges from the strong competition of very strong competitors in terms of resources, people, information, experience, etc... distribution system as well as professionalism in retail such as China, India, Pakistan as well as a huge impact from the COVID-19 pandemic that has been occurred since 2020.

Previous studies have all suggested that the business performance of an enterprise can be affected by internal and external factors. Internal factors such as capital structure, assets, leadership, and development strategy. External factors can be as: the influence of macro factors on growth, inflation, interest rates, and public debt. In this study, the author evaluates both internal and external impacts on agribusiness performance. Through the research, conclusions and policy implications for the Vietnamese government are drawn.

This study consists of 5 parts; in addition to the introduction, the study has part 2 to review previous studies, part 3 describes data sources and research methods, part 4 describes research results, and finally, a conclusion.

2. Literature Review

Most previous studies indicate that profitability is the ability of a business to earn a profit. Profitability interprets

profitability relative to other factors. Therefore, profitability analyzes methods and measures the performance of a business in terms of the profits earned by the business in relation to the investment of the shareholders or the capital used in the business, or relation to the revenue. Further, the goal of financial management is to maximize the owner's wealth, and profitability is a very important determinant of performance; profitability is an effective measure of the success or failure of a business.

To evaluate the profitability of an enterprise, the profit ratio indicators are often used, since it shows the relationship between profit and actual production costs, showing the business level of the enterprise. There are two commonly used profitability ratios: return on total assets ROA and return on equity ROE.

As shown by Nguyen et al. (2021), Vietnam's deep integration into the world economy has brought many business opportunities for businesses. The inflow of FDI capital has led to FDI enterprises having high technology levels and high productivity, making domestic enterprises capable of learning and imitating. The author's research suggests that the debt ratio has an impact on ROE and ROA. While company growth (shown in total asset growth) has a positive impact on corporate financial performance. Thereby reflecting that growth enterprises are more financially efficient than declining ones, and the ability to effectively use debt in enterprises is likely to help the company grow. In addition, a firm with a larger revenue is likely to generate more profits (Yazdanfar, 2013).

Another study by Al-Dubai and Abdelhalim (2021) suggested that the financial crisis and global risks can affect the growth of countries and, ultimately, the activities of businesses. Under normal conditions, enterprises are capable of operating in a favorable business environment and are capable of achieving economic efficiency. However, in difficult economic conditions, the business efficiency of enterprises is likely to be reduced. Researching 72 enterprises on the stock exchange, the author believes that enterprises with the ability to manage risks have better business performance. More deeply, if the governments of countries have good macroeconomic management capabilities, they are able to make businesses efficient, profitable, and achieve the desired requirements. Through the research, it is confirmed that the macro factor is the factor that has a great impact on the financial situation of the enterprise. For example, GDP growth helps businesses attract more investors, business output and people's income increase, leading to increased spending and market demand, increasing profits of enterprises. It is evident that GDP has a positive effect on the profits of businesses. Further, in Keynesian theory, moderate inflation has a positive effect on production, especially when unemployment is high. Rising prices increase a firm's profit expectations because prices

rise faster than the costs of production. Therefore, inflation adversely affects production (Vätavu, 2014).

Previous studies also discuss that the larger the enterprise size is consistent, the higher the profitability, thanks to the economic advantages of scale Alghusin (2011, 2015), Alarussi and Alhaderi (2018). This means that a large company can benefit from several market advantages and cut product costs, which improves its business performance relative to that of small companies. Small businesses have large operating costs and small production, so production costs are high, and it is difficult to compete in the market. In addition, an older firm often has a high reputation and a lot of experience, thereby creating a favorable environment for more profitable (Chander & Aggarwal, 2008).

The pecking order theory and trade-off theory explain the relationship between financial leverage and profitability in two different ways. According to the capital structure order theory (Myers & Majluf, 1984), leverage and profitability are inversely related. However, managers choose between the benefits of tax shields with the risk of financial distress to be able to confirm the relationship between profitability and financial leverage.

3. Data and Methodology

3.1. Research Data

The source of data used in this study was collected on the Vietnamese stock exchange. As you know, Vietnam has two stock exchanges: Ho Chi Minh City Stock Exchange and Hanoi Stock Exchange.

The businesses taken are listed on the stock exchange and have a long enough operating time. The research period is from 2012 to the end of 2021. The number of enterprises collected is 40 enterprises operating in the agricultural sector.

3.2. Research Models

According to Nguyen et al. (2021), Al-Dubai and Abdelhalim (2021), Vätavu (2014), and Yazdanfar (2013), firm size has a positive effect on profitability. The advantage of economies of scale can help large businesses gain the advantage of lower interest rates and better discount rates because of trading in bulk. Based on previous research on factors affecting the profitability of enterprises such as Nguyen et al. (2021), AL-DUBAI & ABDELHALIM (2021), and Vätavu (2014), the authors suggest the following research model:

$$R_{it} = \beta_0 + \beta_1 LEV_{it} + \beta_2 SIZE_{it} + \beta_3 GROWTH_{it} + \beta_4 AGE_{it} + \beta_5 GDP_{it} + \beta_6 INF_{it} + \varepsilon_{it} \quad (1)$$

In which:

- R : return on investment is measured by ROA (Return on assets);
- LEV : Financial leverage of the enterprise, measured by the ratio of total debt to total assets;
- SIZE : Size of the business, measured in logarithms of total assets;
- AGE : Presenting the time of the business;
- GROWTH : Revenue growth of the business, measured by the ratio $(sales_t - sales_{t-1})/sales_{t-1}$;
- GDP : GDP growth rate;
- INF : Inflation rate;

3.3. Research Methodology

The study used descriptive statistics and pooled regression models (Pooled OLS), Random Effect Model (REM), and Fixed Effects Model (FEM) to estimate the model. It will be shown as follows.

In Figure 1, it is evident that pooled OLS is regressed using all superimposed data regardless of individual, cross-units. The individuals in this study are agricultural enterprises listed on the stock exchange. For each individual, each error is the effect of an unobserved factor that does not change over time and is unique to each individual. Therefore, this model can ignore inter-individual, inter-observational differences. The OLS regression model considers firms to be homogeneous, which often does not reflect the reality because each business is a separate entity with completely different idiosyncrasies that can affect transparency. As such, the OLS model can lead to skewed estimates when these individual effects are not controlled for. In addition, the random effects model (REM) considers inter-firm idiosyncrasies as random and uncorrelated with explanatory variables. The model considers the residuals of each firm as a new explanatory variable. The fixed effect model (FEM) has its own characteristics, which can affect the explanatory variables; there is a correlation between the residuals of each firm and the explanatory variables. FEM can control and separate the effects of these discrete (time-constant)

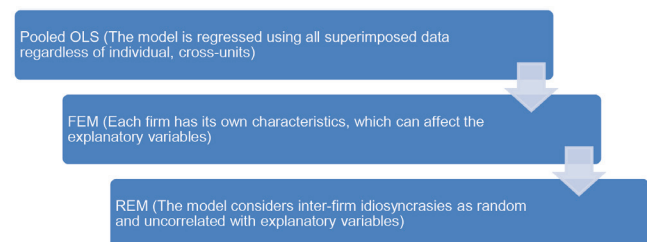


Figure 1: Methods Used in the Analysis

characteristics from the regressors so that we can estimate the net effects of the regressor on the explanatory variable.

4. Results

In the following, the study presents descriptive statistics of the variables used in the regression model, the values of which are shown in Table 1.

Table 2 presents the results of the correlation analysis, through the results showing that the correlation coefficient comparing each pair between the variables is less than 0.8 which is acceptable. That shows that there is no possibility of multicollinearity in the regression model (Vu et al., 2021).

A VIF (Variance Inflation Vector) coefficient of less than 3 shows that there is no multicollinearity between the variables in both models. Therefore, the variables used in this analysis are acceptable (Table 3).

Tables 4 and 5 depict that $\text{Prob} > F = 0.000 < 1\%$, so FEM model is more suitable than Pool OLS. Lagrange multiplier test shows that $p\text{-value} = 0.000 < 1\%$, so the conclusion rejects hypothesis H_0 . Therefore, the REM model (random effects model) is more suitable than the Pooled OLS model. Table 5 also discusses that Hausman test, $p\text{-value} = 0.000 < 1\%$, so the conclusion is rejected the hypothesis H_0 . Therefore, the FEM model is more suitable than the REM

model. Accordingly, the FEM model is the best model for the research model.

After conducting the tests of multicollinearity, autocorrelation, F -test, Hausman, Breusch - Pagan Lagrange, the study has selected the fixed-effects model (REM). The study also examines the phenomenon of variable variance and the Wooldridge test for autocorrelation for residuals and overcomes the phenomenon of variable variance by the FGLS (Feasible Generalized Least Squares) estimation method. The results based on FGLS should be shown in Table 6.

Table 3: Multicollinearity Test Results

| Independent Variables | VIF | Acceptability | R |
|-----------------------|------|---------------|--------|
| SIZE | 1.23 | 0.8776 | 1.1394 |
| AGE | 1.23 | 0.8213 | 1.2175 |
| GROWTH | 1.23 | 0.8432 | 1.1859 |
| LEV | 1.20 | 0.8234 | 1.2144 |
| GDP | 1.24 | 0.8322 | 1.2048 |
| INF | 1.21 | 0.8443 | 1.1844 |
| Mean VIF | 1.54 | | |

Table 1: Statistical Results Describing Quantitative Variables in the Model

| Variables | Obs. | Mean | Std. Dev. | Minimum | Maximum |
|-----------|------|--------|-----------|---------|---------|
| ROA | 400 | 0.042 | 0.162 | -1.212 | 0.453 |
| LEV | 400 | 0.678 | 1.019 | 0.045 | 14.123 |
| SIZE | 400 | 26.456 | 1.564 | 22.642 | 28.632 |
| GROWTH | 400 | 0.083 | 0.011 | -0.003 | 0.016 |
| AGE | 400 | 29.356 | 15.765 | 3.000 | 64.000 |
| GDPG | 400 | 6.212 | 0.765 | 5.432 | 7.763 |
| INF | 400 | 6.546 | 4.654 | 0.879 | 18.345 |

Table 2: Matrix of Correlation Coefficients Between Variables in the Research Model

| | SIZE | AGE | GROWTH | LEV | GDP | INF |
|--------|-------|-------|--------|-------|-------|-------|
| SIZE | 1.000 | | | | | |
| AGE | 0.452 | 1.000 | | | | |
| GROWTH | 0.432 | 0.123 | 1.000 | | | |
| LEV | 0.123 | 0.224 | 0.543 | 1.000 | | |
| GDP | 0.343 | 0.654 | 0.112 | 0.224 | 1.000 | |
| INF | 0.345 | 0.123 | 0.154 | 0.221 | 0.119 | 1.000 |

Table 4: Regression Results of Factors Affecting ROA

| Independent Variables | FEM | | REM | | Pooled OLS | |
|------------------------|-------------|---------|-------------|---------|-------------|---------|
| | Coefficient | P-value | Coefficient | P-value | Coefficient | P-value |
| SIZE | 0.0232 | 0.012 | 0.0522 | 0.011 | 0.0543 | 0.012 |
| AGE | 0.0015 | 0.675 | 0.0012 | 0.643 | 0.0012 | 0.654 |
| GROWTH | 0.0012 | 0.678 | 0.0442 | 0.224 | 0.0124 | 0.233 |
| LEV | 0.0324 | 0.005 | 0.0432 | 0.012 | 0.0543 | 0.013 |
| GDP | 0.0432 | 0.012 | 0.0543 | 0.014 | 0.0345 | 0.012 |
| INF | -0.0012 | 0.654 | 0.0012 | 0.678 | 0.0013 | 0.765 |
| Constant | 0.9554 | 0.012 | 2.2345 | 0.001 | 2.2355 | 0.012 |
| Number of observations | 400 | | 400 | | 400 | |
| Adjusted R^2 | 0.5753 | | 0.5543 | | 0.5562 | |
| F Statistics | 111.23 | | 123.34 | | 123.32 | |
| Prob | 0.000 | | 0.000 | | 0.000 | |

Table 5: Results of F-test, Breusch Pagan Lagrange and Hausman

| Dependent Variable: ROA | | | |
|-------------------------|--------------|--------------------------------------|--------------------------------------|
| Test | Chi - square | Prob | Selected Method |
| F-test | 0.000 | FEM is more suitable than Pooled OLS | |
| Breusch Pagan Lagrange | 18.569 | 0.000 | REM is more suitable than Pooled OLS |
| Hausman | 48.457 | 0.000 | FEM is more suitable than REM |

Table 6: FGLS Estimation

| Independent Variables | Dependent Variable: ROA | |
|------------------------|-------------------------|-----------------------|
| | FGLS | |
| | Regression Coefficient | Level of Significance |
| SIZE | 0.0213 | 0.012 |
| AGE | 0.0015 | 0.436 |
| GROWTH | 0.0023 | 0.443 |
| LEV | 0.0432 | 0.021 |
| GDP | 0.0015 | 0.654 |
| INF | -0.0012 | 0.678 |
| Constant | 0.8987 | 0.001 |
| Number of observations | 400 | |
| Adjusted R^2 | 0.5467 | |
| F Statistic | 432.21 | |
| Prob | 0.000 | |

Table 6 indicates that firm size (SIZE) has a positive effect on firm performance at the 1% significance level, meaning that a larger size is consistent with more efficiency in doing business. This result is consistent with the trade-off theory, which suggests that large firms tend to borrow more because these firms have the ability to diversify risk, so they can take advantage of tax shield benefits. This result is consistent with the research results of Vätavu (2014) and Yazdanfar (2013). Large-scale enterprises in the agricultural industry will have advantages in accessing advanced technical technology and better diversification than small-scale enterprises; therefore, large enterprises have less risk of bankruptcy than small businesses. That's where big businesses have an edge over small businesses.

Age of business (AGE) has not any impact on ROA at a 1% significance level. Enterprises established first often have advantages in the market, reputation as well as management experience compared to enterprises established later, so the longer the business is established, the more effective the operation can be. But, in this case, we cannot find any evidence of the relationship between AGE and

its performance. That confirms that there is no difference between agribusiness enterprises and established- newly enterprises.

Table 6 also indicates that GROWTH has a positive effect on profitability but insignificance. Specifically, the growth rate of assets will reflect the sales capacity of the business; the higher this rate is, the more goods are sold, which will positively affect business results. However, we cannot find any evidence regarding this variable. That reflects that the business growth in assets has not brought profit. It can be explained that, if the growth in assets is due to the business promoting sales but not paying attention to debt collection, it cannot bring benefits to the business. The pecking order theory and trade-off theory explain the relationship between financial leverage and profitability in two different ways. The results are consistent with the capital structure order theory (Myers & Majluf, 1984); leverage and profitability are inversely related. However, managers choose between the benefits of tax shields with the risk of financial distress to be able to confirm the relationship between profitability and financial leverage.

Table 6 indicates that the impact of macro factors such as GDP growth rate (GDP) and inflation rate (IF) on profitability is not statistically significant. Therefore, the financial crisis, global risks, and macroeconomics cannot affect the growth of agricultural businesses in the case of Vietnam. It meant that agricultural businesses could adapt well to the macroeconomic factors' shocks.

5. Conclusions and Policy Implications

The agricultural sector has an important contribution to the economic development of Vietnam in particular and other countries in general. The growth of enterprises in the industry is an important bridge in promoting the economic development of the country. Based on 40 enterprises in the agricultural industry listed on the Ho Chi Minh City Stock Exchange and the Hanoi Stock Exchange, the research results show that large-scale enterprises have higher economic efficiency than small-scale enterprises. The higher the use of loan capital, the more efficient the enterprise is, reflected in the relatively good debt management ability of enterprises in the agricultural sector.

The research has some implications. First, agricultural businesses need to make efforts to expand their scale and implement investment solutions and technology. Vietnam's agricultural businesses are mainly small and medium-sized (SMEs), relying on outsourcing production and cheap labor as well as using medium and low-level technologies, which makes the operation of agricultural businesses reduce efficiency. Therefore, Vietnam needs to focus on increasing

investment in technology, machinery, and human resources, creating momentum for enterprises to develop firmly and increase operational efficiency. Second, agricultural businesses need to improve the quality and diversification of products, train and improve the skills of employees, expand both domestic and foreign markets, and implement effective marketing strategies for their revenue. Thereby, agricultural enterprises have the ability to take advantage of existing advantages, develop production and business and expand markets.

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