

FIRM SIZE, SOCIAL CAPITAL AND FIRM PROFITABILITY: AN EMPIRICAL STUDY ON VIETNAMESE LISTED COMPANIES

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ABSTRACT: *The research study is focusing on firm-specific determinants of firm profitability for Vietnamese listed companies over the 2010-2016 period with the theoretical framework of firm profitability. The results demonstrate that social capital is significantly correlated with a positive profitability of a firm. A larger firm can exactly have a lower cost of bankruptcy and a higher level of growth rate related to a higher level of performance. In addition, the firm growth can positively generate financial performance. An older firm is more profitable than a younger firm. A higher level of educational degree of managers has a higher level of firm profitability.*

KEYWORDS: firm size, social capital, firm profitability, education, hose

INTRODUCTION

In the background of the global economic integration, the development of business community has contributed a great value to the economy. The firm community in the country needs to grasp advanced technologies and human capital enhancement. Despite of the history of Vietnam dominated by war during 30-year-long struggle to achieve independence in the 20th century, the conflict had escalated during the sixties but since the idea of the economic reforms in Vietnam in 1986 (called Doimoi) with the goal of the development the country to be a socialist-oriented market economy, Vietnam has enjoyed remarkable achievements. GDP increased by 7.10% during 1990 to 2018, foreign direct investment firms have been identified as an important source of financing for not only developed and emerging countries, but also in developing countries and countries in transition like Vietnam. It enhances economic growth and growth model reform (OECD, 2002; Sultan, 2013). Vietnam has greatly experienced such a huge FDI inflows, export performance and business community development.

The various studies have been done on firm performance in developed and developing countries. As presented in some recent studies, the relationship of social capital and firm size on the performance of a firm has been focused (Tian and Zeitun, 2007; Nguyen and Nguyen, 2015; Pratono et al., 2016; Lazar, 2016; Pervan et al., 2017; Akintimehin et al., 2019). Basically, this effect of this relationship is mixed. Social capital is known by the interaction between a firm with the social environment and significantly generating the profit of a firm, is found in the study of Pratono et al. (2016) and Akintimehin et al. (2019). However, many empirical studies related to firm size that is counted by the number of employees (Tian and Zeitun, 2007; Lazar, 2016).

The case of Vietnam, this study is to examine the impact of two important factors such as social capital, firm size and other factors on the effectiveness of a firm in the Vietnamese listed companies over the 2000-2016 period. Therefore, the main aim of this study is to

examine how these variables impact on firm profitability based on the survey of 217 companies of seafood, agricultural and forestry industry over the period of 2010-2016.

The objectives of the study are: to examine the role of social capital, firm size, and other factors on the financial performance of a firm.

The importance of the paper is to provide to the researchers, policy makers and especially the Vietnamese government the evidence of the impact of social capital and the size of a firm on the efficiency of a firm in a developing country.

LITERATURE REVIEW

In order to grasp more opportunities to enhance firm performance, a firm, especially a small and medium sized firm could adapt more suitable policies to develop more competitive advantages in order to overcome difficulties in business in the market as well as enhance the profitability of a firm (Pratono et al., 2016; Lazar, 2016; Akintimehin et al., 2019). Various studies have examined the relationship of social capital and firm size on organizational performance (Nguyen and Nguyen, 2015; Pratono et al., 2016; Lazar, 2016; Pervan et al., 2017; Akintimehin et al., 2019). Social capital basically refers to those factors of effectively functioning social factors such as interpersonal relationships, a sense of identity, a shared understanding, shared norms, shared values, trust, cooperation, reciprocity and other values. Based on Akintimehin et al. (2019), social capital could be counted by the effect of internal and external social capital.

Followed by Pratono et al. (2016), the study analyses the impact of social capital on firm profit in Indonesian SMEs. The study describes the structure of equation model and tests the hypothesis through generalized structured component analysis with random survey on SMEs. The analysis divides the element of social capital into: network, trust and cognitive as well as the elements of marketing capability as pricing capability, product development, and marketing communication. The result demonstrates that the social capital can generate the positive effect to the firm performance in the case of Indonesian small and medium business.

According to Akintimehin et al. (2019), the study investigates the effect of both of internal and external social capital on the financial performance of a company in the Nigerian sector. This study further examines the controlling role of firm's age. Using a survey of 650 informal firm owners in Lagos state of Nigeria, and using the method of the partial least square of the structural equation model (SEM), the findings indicate that social capital has a significant impact on firm performance, internal social capital also has a significant impact on non-financial performance. In other words, internal social capital has no significant impact on financial performance. Further, external social capital has insignificant effect on financial and non-financial performance. If the controlling variable of firm age, social capital has a significant impact on business performance, internal social capital has a significant impact on financial and non-financial performance. Additionally, external social capital has insignificant impact on financial and non-performance. The paper recommends that informal entrepreneurs may take the advantage on internal social capital resources and may also become the sources for the business success.

Lazar (2016) in the study based on Romanian listed companies over the period of 2000-2011, within the framework of resource based the firm. The results indicates that size and labour

intensity negatively affect firm performance, while a positive effect of sales growth and value added is found. The study continues to prove robust when introducing two-way fixed effects model and industry year effects model in order to explain more in the findings.

Nguyen and Nguyen (2015) in the Vietnamese listed companies. Using data of 147 companies during the years from 2006 to 2014. The study checks the impact size and growth on firms' performance, which is exactly found to be positive. A larger firm can own much assets and market proportion so it has lower costs of bankruptcy and higher growth rates associate with higher performance. In the study, it also has an alert for firms to improve their management process and management ability. As suggested in the study of Tian and Zeitun (2007), found a positive and significant impact on firm's performance for growth, and size.

As shown by Pervan et al. (2017), the study has a research in developing countries how age of a firm influences on financial performance. Performing in Croatian food industry based on a panel dataset of 956 firms during the period of 2005-2014, the result showed that firm's age has a negative impact on performance of a firm. Age of a firm is counted by the number of years of a firm in operating in the market. A firm is older, a firm will get more benefits of knowledge from the business such as technological knowledge, supply channels, human capital to overpass the difficulties. Besides, size of a firm positively affect financial profitability due to the effectiveness of scales of economy and scope.

DATA SOURCES AND METHODOLOGY

The findings of the study always depend upon data and the quality of data. It affects the quality of the analysis. This section includes data sources and methodology that have been used in the study.

Data sources

This study has estimated based on the secondary data in the period of 2010 – 2016. The data is retrieved from Ho Chi Minh City Stock Exchange (HOSE). The data of a firm includes financial statement, labor, and income statement. Establishment in 2000, HOSE is located in Ho Chi Minh City, is the largest stock exchange in Vietnam. The study chooses small-sized and agricultural and seafood companies in order to do the analysis.

METHODOLOGY

Numerous of functional forms had been tested the determinants of firm profitability. In this study, we use the model of Akintimehin et al. (2019), Pervan et al. (2017), Lazar (2016) and Pratono et al. (2016)

$$Y = C_0 + C_1X_1 + C_2X_2 + C_3X_3 + C_4D_4 + C_5D_5 + \varepsilon \quad (1)$$

$$ROE = C_0 + C_1 \text{ FirmAge} + C_2 \text{ ManagerEdu} + C_3 \text{ FirmSize} + C_4 \text{ SocialCapital} + C_5 \text{ Growth} + \varepsilon \quad (2.1)$$

$$ROA = C_0 + C_1 \text{ FirmAge} + C_2 \text{ ManagerEdu} + C_3 \text{ FirmSize} + C_4 \text{ SocialCapital} + C_5 \text{ Growth} + \varepsilon \quad (2.2)$$

Where

ROE = Return on Equity

ROA = Return on Asset

FirmAge = Age of a firm = Year of survey – Year of firm’s establishment, a proxy that is used in the studies of Tian and Zeitun (2007), Wignaraja (2011) and Nguyen and Nguyen (2015), Pervan et al. (2017).

ManagerEdu = a dummy variable, is measured for the educational level of the manager in the firm. It gets 1 if a manager has high-school diploma or lower, 2 if a manager has an apprenticeship, 3 if a manager has a college or university degree, 4 if a manager has post-graduate degree. This proxy was exactly used by Lee (2008), Crino and Epifani (2012).

FirmSize = a dummy variable, is measured for the size of a firm. To be precise, it gets 1 if a firm is a small and medium-sized, gets 0 if a firm is micro-sized and has less 10 employees. This proxy was used by Tian and Zeitun (2007); Lazar (2016).

SocialCapital = a dummy variable, is measured for the interaction between a firm with the social environment, this proxy was used by Pratono et al. (2016) and Based on Akintimehin et al. (2019)

Growth = is measured by the growth of revenue increase of a firm. This indicator may be explained for the growth in a firm. This proxy was used by Tian and Zeitun (2007) and Nguyen and Nguyen (2015).

ε = a vector of errors term

RESULTS AND DISCUSSION

Descriptive statistics

Table 1: Summary Statistics

Variable	Observations	Mean	Std. Deviation	Min	Max
Firm Age (number of years)	217	4.91	4.34	1.00	30.00
Number of Employees	217	17.01	28.30	2.00	320
Total Assets ('million VND)	217	4,140.85	7,120.2	20.01	65,010
Debt to Total Liabilities [D/(D+E)]	217	0.46	0.31	0.00	0.52
Revenues ('million VND)	217	6,302	102,480	9.02	196,170.2
Earnings before Tax ('million VND)	217	2.35	4.36	0.05	36.89
Return on Sales (%)	217	12.52	22.30	-80.03	120.35

Source: Calculated by the author

According to the data based on Ho Chi Minh City Stock Exchange, the study collects 31 companies in the seafood, agricultural and forestry industry during 2010 – 2016 period. Table 1 presents the summary statistics of the sample used in the analysis, including number of observations, mean, std. deviation, min and max. Table 1 describes that the age of a firm has an average value of 4.91 years, with a standard deviation of 4.34 years, indicating a huge range in firm age in Vietnam’s listed companies. The highest firm age was 30 years whereby it shows that a few of companies were old.

Regarding leverage (or called by debt to equity ratio), Table 1 shows that a firm is mainly based on own capital. In fact, 46% capital in capital structure choice is sponsored by debt while 54% capital is financed by equity. This capital structure tends to be more secure because the nature of seafood, agricultural and forestry sector needs much working capital in operation.

In terms of capital size, the survey results that the average total assets of enterprises in the sample was about VND 4.14 billion, in which, the range of total assets was too huge and about VND 65 billion. It is evident that a large amount of enterprises were relatively small-sized and micro-sized in scale.

In addition, a majority of businesses had a revenue increase in the period of 2010 – 2016, with an increase of 30%. The profit growth rate of seafood, agricultural and forestry firms in HOSE is quite balanced with the revenue growth. There were 70.3% of enterprises having profit while 19% of enterprises had a decrease in profit.

Further, ROA has an average value of 12.52%, but, the range of ROA is quite large with the lowest and the highest value of ROA of minus 80.03 and 120.35%, respectively. Possibility, Vietnam has maintained a very high economic growth to accelerate good opportunities for many businesses to grow, but not all businesses seizing this opportunity. Moreover, despite the impact of the global crisis, the imbalance of the macro-economic environment and the recession of Vietnamese banks in the period of 2009 – 2012, it had strongly affected the effectiveness of a firm.

Estimation model

Applying OLS, followed by the models of Akintimehin et al. (2019), Pervan et al. (2017), Lazar (2016) and Pratono et al. (2016), the regression equation can be written as follows

$$ROE/ROA = C_0 + C_1 \text{ FirmAge} + C_2 \text{ ManagerEdu} + C_3 \text{ FirmSize} + C_4 \text{ SocialCapital} + C_5 \text{ Growth} + \varepsilon \quad (3)$$

Table 2 presents the regression results of the OLS estimation with totals of six independent variable and a dependent variable of firm profitability.

Table 2: Regression Results

Variable	ROE	ROA	Significant levels	VIF
Constant	-0.187	-0.163	0.001	
FirmAge	0.003	0.004	0.011*	1.123
ManagerEdu	0.052	0.063	0.004*	1.035
FirmSize	0.025	0.035	0.015*	1.351
SocialCapital	0.052	0.065	0.036**	1.357
Growth	0.038	0.028	0.024**	1.238
Adjusted R ²	0.321	0.352		
Durbin – Watson test	1.923	1.925		

Notes: * significant at 1% level, ** significant at 5% level.

Based on OLS model with the explanatory variable of either ROE or ROA, the study describes that the coefficients of FirmAge, ManagerEdu, FirmSize, SocialCapital and Growth

are statistically significant whereby these indicators can explain for the profitability of a firm from Vietnam listed companies. The regression equation is written as follows:

$$\text{ROE} = -0.187 + 0.003 \text{ FirmAge} + 0.052 \text{ ManagerEdu} + 0.025 \text{ FirmSize} + 0.052 \text{ SocialCapital} + 0.038 \text{ Growth} + \varepsilon \quad (2.1)$$

$$\text{ROA} = -0.163 + 0.004 \text{ FirmAge} + 0.063 \text{ ManagerEdu} + 0.035 \text{ FirmSize} + 0.065 \text{ SocialCapital} + 0.028 \text{ Growth} + \varepsilon \quad (2.2)$$

Autocorrelation Tests in the model

According to Table 2, the model is tested for autocorrelation in order to select the best model in the analysis. Using Durbin Watson Test to measure autocorrelation in residuals in the regression analysis. In the theory of econometrics, autocorrelation is explained for the similarity of a time series during consecutive time intervals. It can exactly decrease the standard error in the analysis and can also lead to misunderstand the regression results for predictors. Using Durbin Watson test is good for checking a specific type of autocorrelation.

In the report of The Durbin Watson said that the value is ranging from 0 to 4. If it gets 2, no autocorrelation. The value of between 0 to 2, it is positive autocorrelation. The value of between of 2 and 4, it is negative autocorrelation. In the following explanation, the study is to review the hypotheses of Durbin Watson test include:

H₀: The null hypothesis. It is no first order autocorrelation.

H₁: The alternate hypothesis. It is a claim about the first order correlation exists.

According to Table 2, Durbin Watson test has a value of either 1.923 for ROE or 1.925 for ROA. It concludes that no autocorrelation can be found in the analysis.

Variance Inflation Factor (VIF) Tests in the model

Multicollinearity can occur when two or more predictors in the model are significantly correlated. Multicollinearity can be measured by variance inflation factors (VIF). In general, in the specific model, VIF is the division of the variance with multiple terms by the variance of a model with one term alone. More specifically, VIF is used for testing for multicollinearity in the analysis of ordinary least squares regression. If VIF value is excess of 4.0, there is a problem with multicollinearity (Hair et al., 2010). In the study on VIF, many papers argued that a VIF<10 is acceptable (Hair et al., 1995), but another study said that the limit value of VIF is 5 (Ringle et al., 2015). Finally, the best VIF if selecting the smallest VIF value in relation to the lowest correlation among variables.

Throughout the analysis, the study found that a VIF has a value of between 1.035 and 1.357. It concludes that multicollinearity cannot occur in the model.

Interpretation of the results

The estimation results describe that the determinants of firm performance in the listed companies in Vietnam, as follows: Firm size has a greater impact on firm performance. It said that that a larger level of the size of a firm has a significantly positive impact on the profitability of a firm. In fact, a large firm has a lower average cost due to comparative advantages of economies of scale with the cost per unit of output increasingly declining with increasing scale so that a large firm is more profitable and coefficient than a small firm. This evidence is in line with Nguyen and Nguyen (2015) in the Vietnamese listed companies. The study also concludes that a larger firm may have a lower cost of bankruptcy and a higher

growth rate related to a higher performance. Moreover, a large firm is generally willing to take more encourage in doing business, in particular to make more profit and its effectiveness. Table 2 also indicates that the educational level of managers in the company positively impacts on firm performance during the years of 2010-2016. With a higher level of education, business owners are able to access high knowledge and modern management skills and absorb or imitate new technologies of other companies. It brings more and more opportunities and internal knowledge expansion in the company. In contrast, a manager with a lower level of education needs to spend more time on studying and improving his skills whereby it slows down the process of technology acquisition. The possibility, noted by Lee (2008) is that investment intensity and labor quality are consistent with the productivity through a higher level of innovation. In the study of Crino and Epifani (2012), they said that developing countries cannot easily absorb R&D and technology due to the huge technology gap between them and developed countries. They explained that developing countries have been not easy to promote highly skilled managers. Abhijeet (2010) demonstrated that investments in educational sector tend to impact economic growth after some time-lag whereby it takes time for the managers to apply knowledge into practice.

Regarding the age of a firm, the study describes that firm age is significantly and positively associated with a firm's efficiency. Specifically, an old firm has a higher level of profitability than a younger firm. This evidence is not consistent with the study of Pervan et al. (2017), the study shows that age of a firm has a robust to the profitability of a firm in Croatian food industry. An older firm is more effective than a younger firm in business results. Wignaraja (2011) in conclusion indicates that firm age is at best a crude and very general denoting for learning very broadly. An older company has a lot of experience in the marketplace, so it often has many advantages in terms of business, customers and profit. In addition, Vietnam has lots of micro-sized firms that have been difficult to access loans with low interest rate. Loaning to small firms is a somewhat riskier proportion for banks mortgage lending. In other words, micro-sized firms typically pay higher interest rates on loans than bigger firms so that these firms have not had any chance to access a competitive loan for the business.

In regard to how social capital impacts on the profitability of a firm, the study demonstrates that social capital is significantly associated with the positive effectiveness of a firm. In Vietnam, a firm is consistent with business union like Vietnamese business union, Vietnamese young business union, when the business owner has a good relationship with the unions, it will increase the reputation of business opportunity and access to the market, technology, labor, and policies as well as share each other about capital, skilled labor and technology. This is in line with the study of Pratono et al. (2016), social capital can generate the positive effect to the firm performance in the case of Indonesian small business. Akintimehin et al. (2019) also found this finding in a survey of 650 informal businesses in Lagos, Nigeria.

The study also finds the evidence of growth of a firm that can positively generate firm performance. This finding is associated with Nguyen and Nguyen (2015), a higher level of growth rate of a firm is consistent with a higher level of the profitability of a firm. In fact, a growth firm has the ability to scale up business rapidly, especially in total assets, equity, fixed assets and competitive advantages. Growth firm in the early stage of development cannot be profitable but in the long run the manager is generally willing to make in hope of increasingly

rapid revenue growth rate and take more profit. Tian and Zeitun (2007) also found a positive relation between firm growth and firm effectiveness.

CONCLUSION

Social capital basically refers to those factors of effectively functioning society such as interpersonal relationships, identity, a shared understanding, a shared norm and value, trust, cooperation, reciprocity and other values. Firm size is proxied by the size of a firm that is counted by the number of employees. Various studies have investigated the relationship of social capital and firm size on business performance.

In the study, the author found the findings of the impact of social capital and size of a firm on financial performance of a firm in the case of Vietnamese listed companies. Using 217 companies in the seafood, agricultural and forestry industry during 2010 – 2016 period, the study demonstrates that a larger level of the size of a firm has a significantly positive impact on the profitability of a firm due to scales of economy and scope. Further, a larger firm may have a lower cost of bankruptcy and a higher growth rate related to a higher performance. With social capital, social capital is significantly associated with the positive effectiveness of a firm like the findings of Akintimehin et al. (2019) found in informal businesses in Lagos, Nigeria. In addition to the study, the growth of a firm can positively generate firm performance. An old firm is more efficient than a younger firm. A higher level of educational degree of managers in the company has a higher level of firm profitability.

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