

Financing decision and firm performance: Evidence from an emerging country

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CHRONICLE

Article history:

Received: September 4 2019
Received in revised format: September 4 2019
Accepted: October 12, 2019
Available online:
October 12, 2019

Keywords:

Financing decision
Firm performance
Emerging country
GMM
Vietnam

ABSTRACT

This paper gives first empirical evidence from Vietnam, an emerging country, on the impact of financing decision on firm performance in Vietnam. The study uses data of 102 non-financial firms listed on Ho Chi Minh Stock Exchange (HOSE) in the 2008-2018 period. Generalized method of moment (GMM) is employed to overcome drawbacks of the model to assure stable and efficient findings. In this study, return on assets (ROA) is utilized to measure firm performance. Further, financing decision is measured by three indicators: total debt to total assets (TDTA), long-term debt to total assets (LTDTA), and short-term debt to total assets (STDTA). Besides, firm size (SIZE), economic growth (GDP) and inflation rate (INF) are also used as control variables. The paper reveals that firm performance is significantly correlated with financing decision. The findings confirm that the increase in debt use decreases firm performance. Therefore, it is recommended that firms should be chary of using debt to finance business operation as it can lead to bad effects on their performance. The results also report the positive effects of inflation rate on financial development. Accordingly, some strong implications are suggested in order that the authorities and management can develop suitable policies to improve firm performance and aim to a sustainable and steady development.

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1. Introduction

The global financial crisis caused a lot of damages to many countries over the world, especially those whose economic growth is significantly related with export and foreign investment. In the same vein, Vietnam economy and its financial system are not an exception from the “concussion” in the financial crisis and global recession. The crisis brought many challenges which are also good opportunities for firms to improve their competitiveness and adaptability. Financial decisions of firms are even more essential as they help overcome the difficulties, challenges as well as to make use of the opportunities to develop sustainably. Financial decision has been always an important decision made by firms. According to Cui et al. (2011), financial decision is correlated to determining capital needs, sources and mobilization period to gain profits. Therefore, financing decision is one of the key ones made by firms to pursue the goal of profits. Financing decision shows level of total assets which is financed by debt. It is recommended that management should maximize firm performance by utilizing the combination of debt and equity. This has been discussed in a number of following literature: Azhagaiah and Gavoury (2011), Burja (2011), Malik (2011), Seelanatha (2011), Akinlo and Asaolu (2012), González (2013), Nirajini and Priya (2013), Sivathaasan et al. (2013), Chechet and Olayiwola (2014), Hamid et al. (2015), Ahmad et al. (2015), Sultan et al. (2015), Vithessonthi and Tongurai (2015), Daud et al. (2016), Ogebe et al. (2013), Ameen and Shahzadi (2017), Detthamrong et al. (2017), Jaisinghani and Kanjilal (2017), Ghayas and Akhter (2018), Odusanya et al. (2018). According to a report of The Financial Stability Board in 2015, there was a significant improvement in debt on total assets ratio of non-financial firms after the global financial crisis. This is clearly expressed in emerging economies. Debt ratio represents for financial risk of a firm. Wrong financing decision may hinder firms from good operation. In a certain case, this can lead a firm to face bankruptcy. Thus, firms should be aware of effects of financing decision on firm performance. Although many studies empirically examine the relationship between financing decision and firm performance, most of them are mainly conducted in developed countries but not those

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which are developing and emerging like Vietnam. In specific, none of studies has been analyzed this matter in Vietnam, so this paper is aimed to resolve it. By this research, we examine the influence of financing decision on performance of 102 non-financial firms listed on Ho Chi Minh Stock Exchange (HOSE). The data covers firms which were listed since before 2008 until the end of 2018. Financial institutions such as banks and insurance firms are excluded from the list as their capital structure is radically different from non-financial firms. This will provide firms better understanding on the association between financing decision and firm performance, assist the management in making rational financing decision in the aim of improving the firm performance (Chang et al., 2019).

2. Literature review

Cui et al. (2011) reported that financing decision indicated the level of using debt to total assets. Chang et al. (2018) measured financing decision by using ratios of total debt to total assets, long-term debt to total assets and short-term debt to total assets. Consequently, their research mainly analyzed the effects of these ratios on firm performance to verify the association between financing decision and firm performance.

Azhagaiah and Gavoury (2011) analyzed data of 102 information technology firms listed on Bombay Stock Exchange in India over the period 2000-2007. The results show that firm performance is negatively influenced by debt to total assets ratio. On the contrary, Burja (2011) asserted that debt to total assets ratio exerts a positive impact on firm performance. The research was conducted by using data of a Rumanian chemical firm over the 1999-2009 period and measured firm performance by return on assets. In the same period, by researching data of 35 listed insurance and non-insurance firms in Pakistan over the period of 2005-2009, Malik (2011) confirmed that debt ratio has an inverse influence on firm performance. In addition, he also pointed out the concurrent relationship between firm size and its performance. Based on his findings, Seelanatha (2011) noticed the concurrent influence of debt ratio and firm size on firm performance. The study was investigated data from Shanghai Stock Exchange and Shenzhen Stock Exchange which include 31 industries and 7,820 observations in the period from 1999 to 2007. Then, after examining data of 66 purposively selected firms from listed non-financial ones on the Nigerian Stock Exchange (NSE) in the 1999-2007 period, Akinlo and Asaolu (2012) found that debt ratio was inversely correlated with ROA and firm size was concurrently correlated with ROA. Another study by González (2013) collected data of 10,375 firms among 39 developed and developing countries over the period 1995-2004 and reported a negative impact of debt ratio on corporate performance. The performance was also measured by ROA. At the same time, Nirajini and Priya (2013) conducted a study among listed trading firms in Sri Lanka from 2006 to 2010 and revealed that debt to total assets and long-term debt to total assets ratios exert a concurrent impact on firm performance. It is consistent with Sivathaasan et al. (2013) who used data of 11 manufacturing firms listed on Colombo Stock Exchange from 2008 to 2012 and also found concurrent effects of debt to total assets ratio and firm size on the performance. Chechet and Olayiwola (2014) selected 70 firms among 240 those listed on Nigerian Stock Exchange in the 2000-2009 period and also concluded that debt to total assets ratio inversely correlated with firm performance. In Malaysia, Hamid et al. (2015) researched data of 49 family and non-family firms during the period from 2009 to 2011 used three indicators of debt ratio which are short-term, long-term and total debt in examining the impact on performance. Their findings revealed the inverse effects of total debt to total assets (TDTA), long-term debt to total assets (LTDTA) and short-term debt to total assets (STDTA) on the firm performance.

Further, the results found that firm size significantly influence how the firms perform. That is the negative impact on family firms and the positive impact on non-family ones. Also, in 2015, Ahmad et al. (2015) reported the negative correlation between debt to total assets ratio and net profit to total assets ratio. Data were collected among 18 Pakistan cement manufacturers listed on KSE from 2005 to 2010. A research conducted by Sultan et al. (2015) among 4 industrial firms listed on Iraq Stock Exchange in the 2004-2013 period reported that the effects of debt ratio and firm size on the performance were inverse. By examining 159,375 non-financial firms in Thailand during the financial crisis of 2007-2009, Vithessonthi and Tongurai (2015) stated that debt ratio was significantly associated with net profit to total assets. It had a negative impact on domestic-oriented firms and a positive influence on international-oriented firms. Additionally, they stated the positive effects of GDP and firm size on ROA. Daud et al. (2016) examined 76 publicly listed firms in Bursa, Malaysia from 1994 to 2007. The results interestingly indicated an inverse impact of debt ratio and a concurrent impact of firm size on ROA. In the same period, six firms which are Total Nigeria PLC, Mobil Oil, Forte Oil May and Baker, GSK, NEIMETH were selected in a study of Ogebe et al. (2016) conducted from 2000 to 2010. The results confirmed that debt ratio was negatively correlated with firm performance. Moreover, it is also stated that GDP and inflation rate had positive implications on the performance. By using panel data of 18 cement firms listed on Karachi Stock Exchange in the period of 2006 to 2015, Ameen and Shahzadi (2017) concluded that total debt to total assets and long-term debt to total assets ratios inversely affected how the firms perform. However, short-term to total assets was concurrently related to the performance. Detthamrong et al. (2017) found the positive connection between debt ratio and firm performance based on the results of a study conducted among 493 non-financial firms in Thailand from 2001 to 2014. A study conducted by Jaisinghani and Kanjilal (2017) using data of 1,194 manufacturing firms publicly trading in India during the period of 2005-2014 revealed the significant influence of long-term debt to total assets ratio on net profit to total assets ratio. This correlation is negative among firms whose equity was under 148 million rupees and positive among those whose equity exceeds 148 million rupees. Also, Odusanya et al. (2018) conducted a study in 114 listed firms on Nigerian Stock Exchange from 2008 to 2012 and concluded that short-term debt to total assets and inflation rate were inversely correlated with firm performance. Besides, long-term to total debt and firm size had no statistical significance on the performance. Seissian et al. (2018) investigated 94 firms listed on New York Stock Exchange with credit ratings by Morningstar from 2014 to 2015. The results revealed concurrent effects of debt ratio and inversely firm size influence on the firm performs.

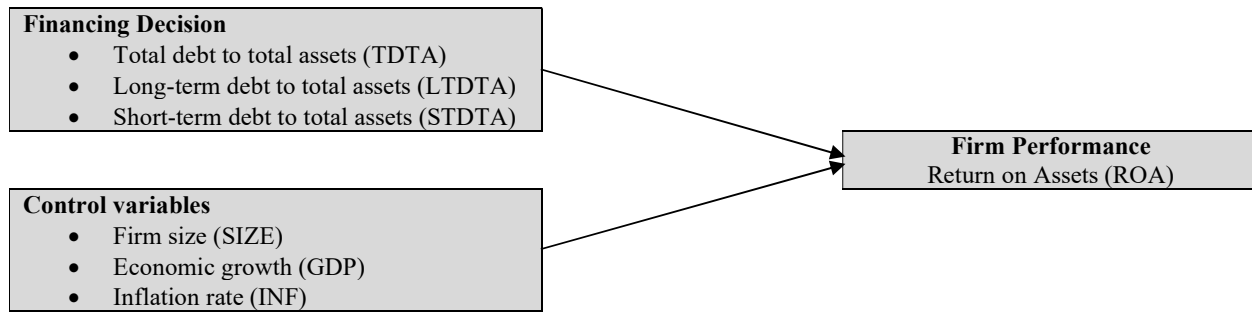
3. Data and Methodology

3.1. Data Collection

The paper utilizes data from audited financial statements which are publicized on websites of 102 non-financial firms listed on Ho Chi Minh Stock Exchange (HOSE). The study only covers firms which were listed before 2008 and keep being listed to the end of 2018. Other financial institutions like banks, insurance firms are excluded as their capital structure is considerably different from that of non-financial firms. After collecting the data, the author performs calculating variables based on extracted financial statements. Also, data of economic growth (GDP) and inflation rate (INF) are used from World Bank.

3.2. Methodology

The paper employs Generalized method of moment (GMM) to analyze the impact of financing decision on firm performance. This method has been also used in earlier research by González (2013), Vithessonthi and Tongurai (2015), Odusanya et al. (2018). One of its biggest advantages is to resolve the problem of heteroscedasticity, autocorrelation and potential endogenous (Doytch & Uctum, 2011). Following other studies (Azhagaiah and Gavoury (2011), Burja (2011), Malik (2011), Seelanatha (2011), Akinlo and Asaolu (2012), González (2013), Nirajini and Priya (2013), Sivathaasan et al. (2013), Chechet and Olayiwola (2014), Ahmad et al. (2015), Sultan et al. (2015), Vithessonthi and Tongurai (2015), Daud et al. (2016), Ameen and Shahzadi (2017), Detthamrong et al. (2017), Jaisinghani and Kanjilal (2017), Odusanya et al. (2018), the author employs ROA as an indicator of firm performance. About financing decision, it is measured by three indicators of debt ratio which are total debt to total assets, short-term debt to total assets and long-term debt to total assets. In addition, some control variables of firm size (SIZE), economic growth (GDP) and inflation rate (INF) are also added as indicators of corporate bigness and macroeconomic situations which are anticipated to affect the performance of firms listed on Ho Chi Minh Stock Exchange.



Source: Suggested by the Author.

Fig. 1. Conceptual model of the Study

Table 1
Variables used in the research model

Variables	Measures	Previous research
Dependent variable		
Firm performance (ROA)	Net profit / Total assets	Azhagaiah and Gavoury (2011); Burja (2011); Malik (2011); Seelanatha (2011); Akinlo and Asaolu (2012); González (2013); Nirajini and Priya (2013); Sivathaasan et al. (2013); Chechet and Olayiwola (2014); Hamid et al. (2015); Ahmad et al. (2015); Sultan et al. (2015); Vithessonthi and Tongurai (2015); Daud et al. (2016); Ogebe et al. (2016); Ameen and Shahzadi (2017); Detthamrong et al. (2017); Jaisinghani and Kanjilal (2017); Ghayas and Akhter (2018); Odusanya et al. (2018); .
Independent variables		
Total debt to total assets (TDTA)	Total debt / Total assets	Azhagaiah and Gavoury (2011); Burja (2011); Malik (2011); Seelanatha (2011); Akinlo and Asaolu (2012); González (2013); Nirajini and Priya (2013); Sivathaasan et al. (2013); Chechet and Olayiwola (2014); Hamid et al. (2015); Ahmad et al. (2015); Sultan et al. (2015); Vithessonthi and Tongurai (2015); Daud et al. (2016); Ogebe et al. (2016); Ameen and Shahzadi (2017); Detthamrong et al. (2017); Ghayas and Akhter (2018); .
Long-term debt to total assets (LTDTA)	Long-term debt / Total assets	Nirajini and Priya (2013); Hamid et al. (2015); Ameen and Shahzadi (2017); Jaisinghani and Kanjilal (2017); Ghayas and Akhter (2018); Odusanya et al. (2018).
Short-term debt to total assets (STDTA)	Short-term debt / Total assets	Hamid et al. (2015); Ameen and Shahzadi (2017); Ghayas and Akhter (2018); Odusanya et al. (2018).
Control variables		
Firm size (SIZE)	Natural logarithm of turnover	Malik (2011); Seelanatha (2011); Akinlo and Asaolu (2012); Sivathaasan et al. (2013); Hamid et al. (2015); Sultan et al. (2015); Vithessonthi and Tongurai (2015); Daud et al. (2016); Ghayas and Akhter (2018); Odusanya et al. (2018); .
Economic growth (GDP)	Data from World Bank	Vithessonthi and Tongurai (2015); Ogebe et al. (2016).
Inflation rate (INF)	Data from World Bank	Ogebe et al. (2016); Odusanya et al. (2018).

Source: Compiled by the Author from earlier studies

Therefore, the research model is estimated using the following equation:

$$ROA_{it} = \beta_0 + \beta_1 TDTA_{it} + \beta_2 SIZE_{it} + \beta_3 GDP_t + \beta_4 INF_t + \epsilon_{it} \tag{Model 1}$$

$$ROA_{it} = \beta_0 + \beta_1 LTDTA_{it} + \beta_2 SIZE_{it} + \beta_3 GDP_t + \beta_4 INF_t + \epsilon_{it} \tag{Model 2}$$

$$ROA_{it} = \beta_0 + \beta_1 STDTA_{it} + \beta_2 SIZE_{it} + \beta_3 GDP_t + \beta_4 INF_t + \varepsilon_{it} \quad (\text{Model 3})$$

In which firm performance (ROA) is dependent variable, and independent variables include Total debt to total assets (TDTA), long-term debt to total assets (LTDTA) and short-term debt to total assets (STDTA). Moreover, Control variables: firm size (SIZE), economic growth (GDP), inflation rate (INF).

4. Results and Discussion

4.1. Descriptive statistics

Data of 102 firms listed on Ho Chi Minh Stock Exchange in the 2008-2018 period are shown in Table 2 as follows,

Table 2
Descriptive statistics of variables

Variables	Obs.	Median	Std. Dev.	Min	Max
ROA	1,122	0.0759	0.0815	-0.6455	0.7837
TDTA	1,122	0.4488	0.2128	0.0298	0.9439
LTDTA	1,122	0.0942	0.1342	0.0000	0.6930
STDTA	1,122	0.3546	0.2026	0.0268	0.9350
SIZE	1,122	27.5269	1.3570	23.1431	32.1236
GDP	1,122	0.0610	0.0059	0.0525	0.0708
INF	1,122	0.0812	0.0655	0.0088	0.2312

Source: Computed by the Author.

4.2. Correlation Matrix

Correlation coefficients among variables are shown in Table 3:

Table 3
Correlation coefficients among variables

	ROA	TDTA	LTDTA	STDTA	SIZE	GDP	INF
ROA	1.0000						
TDTA	-0.4452	1.0000					
LTDTA	-0.2096	0.3890	1.0000				
STDTA	-0.3286	0.7924	-0.2537	1.0000			
SIZE	0.0595	0.3501	0.0914	0.3071	1.0000		
GDP	0.0455	-0.0209	-0.0239	-0.0062	0.0190	1.0000	
INF	0.0166	-0.0148	0.0213	-0.0297	-0.1149	-0.2705	1.0000

Source: Computed by the Author.

Table 3 indicates that independent variables of TDTA, LTDTA and STDTA are negatively correlated with ROA. Meanwhile, control variables of SIZE, GDP and INF are positively associated with ROA.

4.3. Hypothesis testing

Table 4
Results of VIF, heteroscedasticity and autocorrelation tests (Model 1)

Multicollinearity test			Heteroscedasticity test	Autocorrelation test
Variable	VIF	1/VIF		
SIZE	1.16	0.8654	chi2(14) = 27.17 Prob > chi2 = 0.0183**	F(1, 101) = 9.947 Prob > F = 0.0021***
TDTA	1.14	0.8763		
INF	1.09	0.9144		
GDP	1.08	0.9262		
Mean VIF = 1.12				

Note: ** and *** indicate significance at the 5% and 1% level, respectively.

Source: Computed by the Author.

Table 5
Results of VIF, heteroscedasticity and autocorrelation tests (Model 2)

Multicollinearity test			Heteroscedasticity test	Autocorrelation test
Variable	VIF	1/VIF		
INF	1.09	0.9142	chi2(14) = 23.57 Prob > chi2 = 0.0517*	F(1, 101) = 14.684 Prob > F = 0.0002***
GDP	1.08	0.9264		
SIZE	1.02	0.9779		
LTDTA	1.01	0.9903		
Mean VIF = 1.05				

Note: * and *** indicate significance at the 10% and 1% level, respectively.

Source: Computed by the Author.

Table 4, Table 5 and table 6 indicate that multicollinearity of these models is not considered to be serious. However, heteroscedasticity and autocorrelation really occur in all of them. Hence, we use GMM for analyzing all of them as it allows to control heteroscedasticity and autocorrelation as well as potential endogenous problems (Doytch & Uctum, 2011).

Table 6
Results of VIF, heteroscedasticity and autocorrelation tests (Model 3)

Multicollinearity test			Heteroscedasticity test	Autocorrelation test
Variable	VIF	1/VIF		
SIZE	1.12	0.8944	chi2(14) = 22.92 Prob > chi2 = 0.0615*	F(1, 101) = 11.287 Prob > F = 0.0011***
STDTA	1.10	0.9056		
INF	1.09	0.9148		
GDP	1.08	0.9266		
Mean VIF = 1.10				

Note: * and *** indicate significance at the 10% and 1% level, respectively.

Source: Computed by the Author.

4.4. Regression result

As can be seen from Table 7, all three models have significance at the 1% level. Hasen test reveals that instruments used in these models are valid. Also, Arellano-Bond test shows that autocorrelation among errors do not occur in these models. Consequently, Model 1, 2 and 3 are appropriate and utilizable. Therefore, ROA is negatively influenced by TDTA (-0.1639), LTDTA (-0.1284), STDTA (-0.1414) at the 1 percent level of significance. In addition, in the three models, INF exerts positive effects on ROA at the 10% level of significance. The effects of firm size (SIZE), economic growth (GDP) on firm performance (ROA) is not statistically significance.

Table 7
Estimated results using GMM

ROA	Model 1	Model 2	Model 3
Constant	0.1110	-0.1182	0.0761
TDTA	-0.1639***		
LTDTA		-0.1284***	
STDTA			-0.1414***
SIZE	-0.0001	0.0059	0.0003
GDP	0.4785	0.4830	0.4910
INF	0.0641*	0.0665*	0.0613*
Significance level	Wald chi2(3) = 155.80 Prob > chi2 = 0.0000***	Wald chi2(3) = 66.13 Prob > chi2 = 0.0000***	Wald chi2(3) = 151.16 Prob > chi2 = 0.0000***
Number of instruments	13	13	13
Number of groups	102	102	102
Arellano-Bond test for AR(2) in first differences	0.864	0.649	0.810
Sargan test	0.251	0.142	0.203

Note: * and *** indicate significance at the 10% and 1% level, respectively.

Source: Computed by the Author.

5. Conclusions

The paper utilized GMM to test the influence of financing decision on corporate performance of 102 non-financial firms listed on Ho Chi Minh Stock Exchange from 2008 to 2018. In this paper, financing decision was measured by three indicators of debt ratio which are total debt to total assets (TDTA), short-term debt to total assets (STDTA) and long-term debt to total assets (LTDTA). The results reveal the negative influence of financing decision on firm performance. Therefore, the increase in debt use will decrease profitability. In other words, the higher debt ratio is, the lower profits firms can gain. This finding is intriguingly in line with that of Hamid et al. (2015). This does not support trade-off theory but corroborates pecking order theory. According to it, firms with high profit tend to use their profit to finance their capital needs. Thus, the relationship between debt ratio and performance is inverse. This has been found in many earlier research (Azhagaiah & Gavoury, 2011; Malik, 2011; Seelanatha, 2011; Akinlo & Asaolu, 2012; González, 2013; Ogebe et al., 2013; Chechet & Olayiwola 2014; Hamid et al., 2015; Ahmad et al., 2015; Sultan et al., 2015; Daud et al., 2016; Ameen & Shahzadi, 2017). The results also report the positive correlation between inflation rate (INF) and corporate performance. To be specific, mild inflation rate can boost the performance of firms. This corroborates with what was found by Ogebe et al. (2013). Based on these findings, some implications are suggested for the authorities and management to make appropriate decisions in order to improve firm performance and aim to a sustainable development. In specific:

- To the authorities: It is advisable to develop suitable policies to keep inflation at an acceptable rate. This greatly contributes to stabilize macroeconomic situations and consequently brings considerable improvement in financial and banking industry, lower interest, better liquidity. Also, it helps firms boost their operation, reduce input cost, improve competitiveness and performance.

- To the management: It is essential for management fully recognize the role of financing decision in boosting corporate performance. In fact, debt capital greatly accounts in total capital. Also, the paper interestingly reveals the inverse association between total debt to total assets and corporate performance. Hence, the management should consider cutting on debt in capital structure of the firm. By employing GMM to examine the impact of financing decision on performance of firms listed on Ho Chi Minh Stock Exchange, the objective of the research has been successfully reached. According to the findings, the study suggests strong implications for the authorities and firm management. However, the paper has its limitations when measuring firm performance by only ROA, not by other indicators such as Return on Equity (ROE), Return on Investment (ROI), Gross profit margin (GPM), Net profit margin (NPM), Return on Capital employed (ROCE). Moreover, industry-specific factors and firm international diversification are not covered yet. That will be an interesting trend for future studies.

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