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# Determinants of Profitability: Case Study of Real Estate Companies in Hochiminh Stock Exchange

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## Abstract

This study is conducting an empirical examination on the determinants of firm profitability of real estate companies listed on HOSE from 2010 to 2018. The difference from previous studies would lie in the usage of explanatory variables, the quantity of sample and the period of study. Based on data of 34 companies with 306 observations, this research methodology applies descriptive statistics, correlation statistics and regression analysis. The empirical results revealed that firm size, asset turnover, liquidity have a significant impact on firm profitability, while firm growth showed no significant effect on profitability denoted by ROA and ROE.

**Keywords:** Determinant, Firm Size, Asset Turnover, Liquidity, Growth

## 1. Introduction

According to Nimalathasan (2009), profit is the major objective of a business. In the accounting view, profit evaluates not only the success of the products but also the development of the market for the product. In other words, profit provides proofs about earnings potential of a firm and how efficiently a company is managed. A company should gain profits in order to survive, maintain and grow over a long period of time. In case that the companies are not able to earn profit, capital invest will be eroded, which might lead to bankruptcy if this situation prolongs.

Profit and profitability convey two different meanings. Profit can be regarded as an absolute measure of earning capacity whereas profitability is relative measure of earning capacity. As stated by Iyer (1995), Profit is being as “excess of return over outlay.” In terms of profitability, Nimalathsan (2009) claimed that “it was the ability of given investment to gain a return from its use.” Profitability ratios evaluate companies’ capacity of generating profits and central investment to security analysis, shareholders as well as investors. Specifically, profitability refers to gainings of enterprises that are generated from revenues and after subtracting all expenses incurred during a given timescale. Holstrand (2009) claimed that profitability was further expressed as a price-earnings ratios

evaluating income as well as expenses. Because of the importance of this topic, a great volume of literature studying about the elements contributing to firms' profitability. Nowadays, strong competition dominates the market in which all processes are highly reliable on information, the success of a company demands particular measurement and management systems. In order to follow the principle of rational economics, a corporate has to systematically analyze its financial results or in other expressions is analyze profitability. In fact, there are numerous literature investigated determinants of profitability of firms. On the other hand, it is evident that a deep research about determinants of profitability of listed real estate firms in HOSE should be done. Currently, Vietnam is witnessing strong urbanization in big cities, especially in the two largest and most vibrant cities, Hanoi and Ho Chi Minh City and key economic zones. Therefore, real estate is a great opportunity and long-term, leaving little in the fierce competition to win the market of Vietnam. Many experts said that Vietnam's real estate attraction of foreign investment is expected to help standardize Vietnam's real estate market. The real estate market is one of the markets with an important position and role for the national economy, having direct relationships with the financial and monetary markets, the construction market and the material market, construction, labor market. Effective development and management of this market will make an important contribution to the process of promoting socio-economic development, creating the ability to attract investment capital for develop and make practical contributions to the process of sustainable urban and rural development towards industrialization and modernization of the country. According to the analysis of economic experts, if the investment in real estate sector increases by 1 USD, it will boost other sectors of the developed economy from 1.5 to 2 USD. Therefore, a study on determinants of profitability of listed real estate firms in HOSE becomes vital.

## 2. Literature Review

Abor (2005) studied the relationship between capital structure and profitability of 20 listed companies in Ghanaian stock exchange. The results show that the negative relationship between total debt and profitability as measured by ROE. The study of Mohammad Fawzi Shubita; Jaafer Maroof Alsawalha (2012) examines the effect of capital structure on profitability by expanding the research of Abor (2005) and Gill, et al. (2011). Data sources used include financial data of 39 companies operating in the industry listed on the Amman Stock Exchange Amman over a period of 6 years from 2004 to 2009. Research results show a negative relationship between total debt and profitability.

Marius Pentea (2014) used a paned data of 55 industrial companies from 1999 to 2012 to explore the determinants of firm's profitability which measured by ROA and ROE. Four independent variables such as firm size, growth, capital intensity and human resources were taken into analyzation. The results revealed that firm size, capital intensity and human resources had positive relationship with profitability while firm growth had no linkage to profitability

Waseem Ahmad et al. (2015) analyzed determinants of textile companies' profitability in Pakistan by utilizing unbalanced panel data of 111 firms from 2006 to 2011. The authors used Net profit as indicator of profitability and firm growth, firm size, liquidity and leverage as independent variables. The empirical result indicated that firm growth positively affected profitability while leverage negatively impact on profitability. Also, liquidity and firm size had no significant relationship with profitability.

Georgeta Vintila et al. (2015) investigated the potential factors impacting on the corporate financial performance of 46 Romania companies listed on the Bucharest Stock Exchange from 2009 to 2013. Based on unbalanced panel data, the authors used multivariate regression models to identify the relationship between profitability (measured by ROA, ROE, Share price) and independent variables (Debt ratio, Size, Liquidity, Sale Growth, Firm Age and Asset Turnover). The empirical result showed that Debt Ratio, Sale Growth negatively affected the profitability while Firm Size had a positive linkage with profitability. Furthermore, the relationship between Total Asset Turnover, Liquidity and profitability were proved to be not statistically validated.

In 2016, Zeeshan Fareed et al conducted a study to investigate the determinants (including firm size, firm age, firm growth, productivity, financial leverage and electricity crisis) of 16 companies' profitability in power and

energy sector in Pakistan from 2001 to 2012. Random effect model is chosen to point out the combination of variables that most suitably estimated the influence of the independent variables on dependent variables (ROA as proxy of profitability). The research findings proved that firm size, firm growth and electricity crisis had positive impacts while firm age, financial leverage and productivity negatively influenced on the firm profitability. Furthermore, the empirical results indicated that firms with higher growth rates would have higher profitability and firm size was the strongest determinant of profitability in power and energy industry of Pakistan.

Adebayo Sayedoyin Ifeduni and Onyeiwu Charles (2018) examined determinants of profitability of manufacturing firms in Nigeria. Twelve companies listed in Nigerian Stock Exchange constituted the sample of this research. The dependent variables were ROA and ROE as proxies of a firm's profitability and the independent variables were Size, Debt Ratio, Asset Growth as explanatory variables. A panel data regression analysis as well as Fixed Effect Model were used in this study. The empirical result revealed that Size and Debt Ratio had a positive correlation with profitability while Asset Growth showed no insignificant association with firm profitability.

G. Thenmozhi (2019) investigated the factors influencing firm profitability of Fast Moving Consumer Goods firms listed in India from 2005 to 2017. Based on panel data estimation on 82 firms, this study applied Multiple regression model. Also, he chose Return on capital employed as dependent variables and size, leverage, liquidity, inventory turnover ratio, assets turnover ratio, past profitability, growth, GDP and interest rate as independent variables. The results illustrated that firm size and asset turnover played the most positively influenced role in enhancing a firm's profitability.

In 2017, Le Thanh Tam and Pham Xuan Trang conducted a study to evaluate factors affecting the profitability of 9 commercial banks listed in HOSE from 2007 to 2013. Commonly, based on panel data, the authors used Random Effects Model to evaluate the relationship between a bank's profitability (measured by ROA, ROE and NIM) and independent variables (Size, Total Asset Growth, Inflation, GDP Growth and Interest Rate). The results showed several key significant internal factors including: Size, Total Assets Growth, Interest Rate and external factors such as: GDP Growth and Inflation.

Hung Ngoc Dang et al. (2019) studied the effect of firm growth, firm size, capital structure on profitability of 214 listed Vietnamese enterprises with a panel of 1070 observations from 2012 to 2018. Based on the regression results by generalized least squares and structural pathways analysis, the outcome illustrated that there was a negative relationship between capital structure and profitability whereas size positively impacted on profitability. Additionally, firm growth had no significant correlation with profitability.

Vu Thi Hanh et al. (2019) studied about the relationship between a firm's wage, firm size and firm age with firm profitability measured by ROA and ROE of 693 listed companies in 2015 by using both ordinary least square and quantile regression methods. The results showed that firm size had positive association with firm profitability while wage and firm age negatively impact on firm profitability.

Le Thi Nhu et al. (2019) investigated the elements influencing firm profitability such as capital structure, firm growth, firm size and asset turnover. Based on panel data collected from 73 listed construction firms in Vietnam from 2008 to 2015 with 584 observations, the authors used quantitative methods and FEM through Hausman test. The outcome pointed out that the firm age and debt ratio had contrast relationship with profitability while growth rate, asset turnover and size positively affect firm profitability

### **3. Data and methodology**

#### *3.1. Data*

The sample for this research consists of listed corporates operating in Real Estate Industry on HOSE. The data for this study is used by panel data collected from 34 real estate companies listed in HOSE over a period of 8 years from 2010 to 2018. The selection of the timescale was made since a relatively large number of businesses were in

need for evaluation aim. Panel data was utilized for this study since it was a qualified research tool providing results which cannot be assessed by Cross Sectional or Time Series Data (Asimakopoulos, Samitas, & Papadogonas, 2009). Also, this method offers more benefits compared to cross-sectional approach since the quantity of data points and level of freedom can be accelerated and the issue of multicollinearity can be decreased, which enhances the efficiency of econometric evaluation (Hsiao, 1986). Besides, time influence would be incorporated with the aim of manage heterogeneity which is grasped by Fixed or Random effects methods. Based on Baltagi's view (1995), these are parts leading to one-sided results when being ignored in cross-sectional or time arrangement evaluations.

### 3.2 Variables

Based on previous studies, determinants of profitability will be tested by size, growth, liquidity, asset turnover and TDTA, ROA and ROE, as follow:

Table 1: Variables

Category	Variable	Formula	Authors
Dependent variables : profitability			
	ROA	$\frac{Net\ income}{Total\ Asset} \times 100$	Tian and Zeitun (2007) ; Ebiad, (2009); Ramadan et al., (2011); Gil et al., (2011); Sivathaasan et al (2013); Vatavu (2015), Le & Phan (2017) and Abel et al., (2017).
	ROE	$\frac{Net\ income}{Total\ Equity} \times 100$	
Independent variables			
	Size	Natural log of Total assets	Coase (1937) , Ozgulbas et al.(2006), Jonsson (2007), Lee (2009), Faris (2010), Salman &Yazfandar(2012), Pervan & Visic (2012), Bambang et.al (2013).
	GROWTH	$[\frac{Ending\ value}{Beginning\ value} - 1] \times 100$	MacMillan and Day (1987), (Le and Phan, 2017), Cooper et al. (2009), by Eriotis et al. (2007) and Gurcharan (2010)
	Debt-Asset Ratio (TDTA)	$\frac{Total\ liabilities}{Total\ Asset}$	Amidu (2007), Murray and Vidhan (2009), Mahfuzah Salim and Raj Yadav (2012), Ishaya Luka Chechet & Abduljeleel Badmus
	LIQUIDITY	$\frac{Cash}{Current\ Liabilities}$	Eljelly (2004), Nassirzadeh & Rostami (2010), Sandhar & Janglani (2014), Bhayani (2010),
	ASSETTURNOVER	$\frac{Sales}{Total\ Asset}$	Skolnik (2002) , Albayrak and Akbulut (2012), Singh's (2012),

### 3.3. Model

To investigate the determinants of firm profitability, this paper will use the following benchmark estimation:

$$ROE_{it} = \beta_0 + \beta_1 Size_{it} + \beta_2 AssetGrowth_{it} + \beta_3 Liquidity_{it} + \beta_4 AssetTurnover_{it} + \beta_5 DebtRatio + u_{it}$$

$$ROA_{it} = \beta_0 + \beta_1 Size_{it} + \beta_2 AssetGrowth_{it} + \beta_3 Liquidity_{it} + \beta_4 AssetTurnover_{it} + \beta_5 DebtRatio + u_{it}$$

Where:

ROE: Return on Equity

ROA: Return on Assets

i : company

t : time (years)

$\beta_0$ : Intercept

$\beta_{1,2,3,4,5}$  : Coefficient of independent variables.

## 4. Empirical results

### 4.1. Summary statistics

Descriptive statistics demonstrate the mean, minimum, maximum and standard deviation of the variables and provide a overview of the characteristics of the data. Mean is considered most important indicator determining the common value represented in a set of numbers so that if the data is aligned on and a regular basis, the mean value is accurate distribution center. Standard deviation would be a quantity frequently utilized to indicate the dispersion of a variable around the average number. Or it can be said that the standard deviation is used to estimate the dispersion of a data set which has been made into a frequency table. It not only measures the volatility of statistical values but also demonstrates difference in the value of each evaluation time compared to the average value.

Table 2: descriptive statistics of the variables

Variable		Mean	Std. Dev.	Min	Max	Observations	
roe	overall	.0628627	.1747936	-1.7325	.612	N =	306
	between	.0940058		-.3111333	.1763111	n =	34
	within	.1481468		-1.358504	.5254072	T =	9
roa	overall	.0288026	.0684005	-.8965	.2633	N =	306
	between	.0347215		-.1194333	.0782111	n =	34
	within	.0592003		-.748264	.2140915	T =	9
tdta	overall	.5168676	.1763062	.0235072	.9480659	N =	306
	between	.1483108		.1936356	.7653921	n =	34
	within	.0983093		.1548323	1.001288	T =	9
size	overall	28.34556	1.280716	25.6891	33.29389	N =	306
	between	1.190766		26.29672	32.1746	n =	34
	within	.5094124		25.51297	30.21143	T =	9
growth	overall	1.996925	9.764831	-.6249	108.7773	N =	306
	between	6.809527		-.2595444	39.85878	n =	34
	within	7.085091		-37.86185	70.91544	T =	9
liquid-y	overall	.4037814	1.159742	.0014003	11.04387	N =	306
	between	.8328626		.0170191	4.641602	n =	34
	within	.8182515		-4.228427	6.806046	T =	9
asset~r	overall	.3536462	.8456313	.0070022	12.99268	N =	306
	between	.5907165		.0850149	3.618513	n =	34
	within	.6126165		-2.859296	9.727813	T =	9

The primary financial ratio, ROE, measures the capacity of an enterprise to generate earnings from the investment of its shareholders. Based on the table, the average ROE of sample enterprises was 0.0628627 with a standard deviation of 0.1747936, and minimum and maximum values were -1.7325 and 0.612, respectively. In addition, the average ROE in surveyed timescale was 6.29%, which indicated that for every \$100 of shareholders' investment, earnings of \$6.29 would be generated. Nevertheless, it is necessary to claim that some of the selected business recorded slight losses over the given timescale as minimum ROE was -1.7325%. On the other hand, ROA evaluated the efficient usage of all the assets to generate earnings from 2010 to 2018. The mean value for ROA was 0.0288026 with a standard deviation of 0.0684005 and minimum and maximum values were respectively -0.8965 and 0.2633 for 306 observations. Additionally, the average ROA of 34 selected companies was 2.89%, which indicated that for every \$100 invested in assets, earnings of \$2.89 were generated. Overall, the profitability of firms in the Real Estate Industry was noticeably erratic because the value of standard deviation of both ROA and ROE was above their average. The result is consistent with high variation in financial leverage variable due to the fact that greater degree of financial leverage would lead to more volatility in earnings.

Also, the table revealed that five financial ratios including: size, growth, total debt to total asset, liquidity and asset turnover had positive means values which ranged from 0.3536462 of liquidity to 28.34556 of firm size. The high mean value of firm size illustrated that researched firms were big enterprises taking advantage of their size to enjoy economies of scale and positive externalities. Furthermore, in case of firm Size and TDTA, it could be seen that the volatility was not particularly high since their standard deviation was below their average while Growth, Liquidity and Asset turnover had high volatility because their standard deviation was above their average.

#### 4.2. correlation variables:

It can be witnessed from the above table, there was a positive relationship between ROE and remaining variables. Among them, the result showed a significantly positive relationship between ROE and Size ( $r=0.1604$ ). This supports the aforementioned literature about positive relationship between Firm Size and profitability. Other ratios consisting of Growth ( $r=0.0272$ ), Liquidity ( $r=0.0272$ ), Asset Turnover ( $r=0.0224$ ) and TDTA ( $r=0.0206$ ) having a marginal correlation with ROE.

Table 3: correlation coefficient

```
. corr roe roa tdta size growth liquidity assetturnover
(obs=306)
```

	roe	roa	tdta	size	growth	liquidity	assetturnover
roe	1.0000						
roa	0.7584	1.0000					
tdta	0.0205	0.0146	1.0000				
size	0.1604	0.0827	0.3260	1.0000			
growth	0.0272	0.0334	0.0288	0.2690	1.0000		
liquidity	0.0355	0.0657	-0.3947	-0.2352	-0.0263	1.0000	
assetturnover	0.0225	0.0529	-0.2346	-0.1901	0.0174	0.2050	1.0000

Overall, firm profitability has a positive correlation with conducted financial ratios, especially Firm Size. In addition, the table illustrated that TDTA had considerably positive association with Size ( $r = 0.3260$ ) and slightly positive relationship with Growth ( $r=0.0288$ ) while demonstrating a significantly inverse relationship with Liquidity ( $r=-0.3947$ ) and Asset Turnover ( $r=-0.2346$ ). In terms of Size, this ratio showed substantially positive association with Growth ( $r = 0.2690$ ) and negative correlation with Liquidity ( $r=-0.2352$ ) and Asset Turnover ( $r=-0.1901$ ). Also, Growth indicated a negligible correlation with Asset Turnover ( $r=-0.0263$ ) and Liquidity ( $r=0.0174$ ).

### 3.3. Hausman test

Table 4: Hausman Test for ROE

Test	Statistic	Statistic amount	P-value
Hausman	$\chi^2$	5.12	0.3904

Table 5: Hausman test for ROA

Test	Statistic	Statistic amount	P-value
Hausman	$\chi^2$	9.42	0.0934

This tables indicate that the result with p-value is greater than 0.05, therefore null hypothesis is not rejected, in which there is a correlation between the unique errors and the regressors in the model. In this particular case, Random Effect Model (REM), which is a statistical model where the model parameters are random variables, is more suitable. This results of Hausman Test would be consistent with the theory that REM is predicted to generate more effective outcomes after controlling for possible endogeneity and autocorrelation influences related with dynamic models (Blundella and Bond (1998)).

### 3.4. Results

#### 3.4.1. Return on equity

Table 6: Result of regression model by using REM method

```

. xtreg roe tdtta size growth liquidity assetturnover, re robust

Random-effects GLS regression                Number of obs   =    306
Group variable: firm1                       Number of groups =    34

R-sq:  within = 0.0255                      Obs per group:  min =    9
        between = 0.0564                    avg =    9.0
        overall = 0.0297                    max =    9

corr(u_i, X) = 0 (assumed)                  Wald chi2(5)    =   11.81
                                                Prob > chi2     =    0.0375

                                         (Std. Err. adjusted for 34 clusters in firm1)

```

roe	Coef.	Robust Std. Err.	z	P> z	[95% Conf. Interval]	
tdtta	-.0851981	.2065824	-0.41	0.680	-.4900921	.3196959
size	.0319307	.0186541	1.71	0.087	-.0046307	.068492
growth	-.0007824	.0003312	-2.36	0.018	-.0014315	-.0001333
liquidity	.0064944	.01043	0.62	0.533	-.0139479	.0269368
assetturnover	.0094353	.0097188	0.97	0.332	-.0096131	.0284837
_cons	-.8025902	.4510414	-1.78	0.075	-1.686615	.0814347
sigma_u	.08004177					
sigma_e	.15614303					
rho	.20809484	(fraction of variance due to u_i)				

After running Random Effect Model, a multicollinearity test was conducted with “VIF” command to confirm if this estimation result would be reliable or not. The result showed that all coefficients are less than 5, which implies a small degree of correlation amongst the variables. This means no multicollinearity occurs.



Table 7: Collinearity Diagnostics

```
. collin roe tdt size growth liquidity assetturnover
(obs=306)

Collinearity Diagnostics
```

Variable	VIF	SQRT VIF	Tolerance	R- Squared
roe	1.03	1.02	0.9663	0.0337
tdta	1.30	1.14	0.7700	0.2300
size	1.29	1.13	0.7777	0.2223
growth	1.09	1.04	0.9196	0.0804
liquidity	1.22	1.11	0.8175	0.1825
assetturnover	1.09	1.05	0.9137	0.0863
Mean VIF	1.17			

The model is measured using Stata 14 software as follows:

$$ROE = - 0.8025902 + 0.0319307 * Size - 0.0007824 * Growth + 0.0064944 * Liquidity + 0.0094353 * Asset Turnover - 0.0851981 * TDTA (1)$$

Based on above table, Size (0.0319307), Liquidity (0.0064944) and Asset Turnover (0.009453) have a marginally upheld impact on ROE ( $p < 0.05$ ). An increase in Size and Asset Turnover by one unit would lead to the acceleration of ROE by 3.19307%, 0.64944% and 0.9453%, respectively. Additionally, firm growth shows an insignificant effect on firm profitability (-0.0005649). This meant that no matter how firm grow, there is no difference in opportunity to increase firm's profitability. Moreover, the relationship between TDTA and ROE experienced the same pattern in which a negative relationship would be displayed (-0.0851981;  $p > 0.05$ ). In other word, the company should decrease total liabilities so that the firm will have more opportunities to increase ROE as 1 unit increase in TDTA lead to 8.51981% decrease in ROE.

### 3.4.2. ROA

Table 8: Result of regression model by using REM method

```
. xtreg roa tdt size growth liquidity assetturnover, re robus

Random-effects GLS regression           Number of obs   =   306
Group variable: firm1                   Number of groups =   34

R-sq:  within = 0.0359                   Obs per group:  min =    9
      between = 0.0092                               avg =   9.0
      overall = 0.0142                               max =    9

Wald chi2(5) = 16.00
corr(u_i, X) = 0 (assumed)               Prob > chi2     = 0.0068

(Std. Err. adjusted for 34 clusters in firm1)
```

roa	Coef.	Robust Std. Err.	z	P> z	[95% Conf. Interval]
tdta	-.0192515	.0314019	-0.61	0.540	-.0807981 .0422951
size	.0099728	.0051807	1.92	0.054	-.0001812 .0201269
growth	-.0002422	.0001562	-1.55	0.121	-.0005484 .0000641
liquidity	.0043583	.0045467	0.96	0.338	-.0045532 .0132697
assetturnover	.0062441	.0032858	1.90	0.057	-.0001959 .0126841
_cons	-.2474173	.1573094	-1.57	0.116	-.5557382 .0609035
sigma_u	.02890279				
sigma_e	.06190342				
rho	.1789798	(fraction of variance due to u_i)			

After running Random Effect Model, a multicollinearity test was conducted with “VIF” command to confirm if this estimation result would be reliable or not. The result showed that all coefficients are less than 5, which implies a small degree of correlation among the variables. This means no multicollinearity occurs.

Table 9: Collinearity Diagnostics

```

. collin roa tdtta size growth liquidity assetturnover
(obs=306)

Collinearity Diagnostics

Variable      VIF      SQRT      R-
              VIF      Tolerance  Squared
-----
      roa      1.02      1.01      0.9816      0.0184
      tdtta    1.30      1.14      0.7695      0.2305
      size     1.26      1.12      0.7947      0.2053
      growth   1.09      1.04      0.9201      0.0799
      liquidity 1.23      1.11      0.8154      0.1846
      assetturnover 1.10      1.05      0.9122      0.0878
-----
      Mean VIF      1.16

```

The model is measured using Stata 14 software as follows:

$$ROA = - 0.2474173 + 0.0099728 * Size - 0.0002422 * Growth + 0.0043583 * Liquidity - 0.0062441 * Asset Turnover - 0.0192515 * TDTA \quad (2)$$

According to above table, Size (0.0099728), Liquidity (0.0043583) and Asset Turnover (0.0062441) have a marginally upheld coefficient on ROA ( $p < 0.05$ ). This meant that if the other variables remain stable, the 1 unit increasing in size or asset turnover will perform respectively 0.99728%, 0.43583% and 0.62441% increase in ROA.

Since there was no considerable association between growth and ROA, the increase in ROA was not statistically affected by the firm growth. Lastly, in terms of capital structure, TDTA (-0.0192515) had a negative influence on ROA, which indicated that the more total debt enterprises cope with might lead to the decline in firms's ROA because one unit increase in TDTA will lead to 1.92515% decrease in ROA.

**LIQUIDITY:** The study showed a positive relationship between Liquidity and Firm's profitability. This empirical result was in line with various investigations from leading authors such as: Bhunia et al. (2011), Takon Samuel Manyo and Vera N.Ogakwu (2013), Victor Curtis Lartey et al. (2013), Uwalomwa (2013) and Zaid et al. (2014). However, it was contrast to the perspectives of Eljelly (2004), Nassirzadeh & Rostami (2010), Sandhar & Janglani (2014), Bhayani (2010), Mistry (2012) and Pratheepan (2014). In fact, compared to previous years, the business cash flow of many real estate listed firms recently had appeared unusual signs when inventory, receivables, and short-term liabilities increased sharply, while money and cash equivalents of some businesses are showing signs of decline, though still showing profits. The rate of successful capital mobilization by issuing bonds is very low, any enterprise that mobilizes through this channel must pay very high interest rates. Liquidity ratio in the real estate market is also very low when the number of successful transactions is only about 2%. As a result, liquidity ratio plays a vital role in firms' operation as the higher liquidity ratio firms had, the higher ability it pay mature debts of different types of corporate debt. Based on the aforementioned result, it was evident to raise the cash and lower the current liabilities in order to boost the profitability of corporations. When the liquidity index increases, the amount of cash reserves and cash equivalents increases, thereby helping businesses reduce transaction costs and financial risks, along with strengthening the faith of the investors. This will cause the business to increase sales and profits, in other words, the profitability of the business. Moreover, the higher market operations Real Estate business had, the more notable achievements they could accomplish. *In short, firms' liquidity had a statistically significantly positive impact on profitability of the firms in Real Estate industry.*

**FIRM SIZE:** In particular, the assessed coefficients of Firm size with profitability end up being slightly positive. Although there was an opposite conclusion between this empirical result and previous researches of Baumol (1959), Jonsson (2007) or Lee (2009) claiming that firm size had an inverse relationship with profitability, this result was in the similar direction with studies conducted by many worldwide authors such as Collins and Preston (1969), Myers and Majkuf (1983), Ozgulbas et al.(2006), Papadognas (2007), Faris (2010), Salman & Yazfandar (2012), Pervan & Visic (2012) and Bambang et al. (2013). The real estate firms listed in HOSE have greater profitability as their total asset expands. This research also indicated that big corporates enjoy higher profit compared to small one, which might spring from the scenario that large firm could adapt to technological advancement or macroeconomic environment as well as take advantage of their position in negotiating the purchasing cost for the vacant land, implementing marketing strategies and attracting customers. According to Economies of scale which happens whenever accelerating output would lead to lower long-run average costs, if companies increase in size, they become more effective and profitable. Moreover, As claimed by Chell and Baines (2004), firm with small size affects profitability in many dimensions. They would be evidently more likely to confront with financial constraints, which prevented them to gain access to finance from financial institutions. Small-sized enterprises could be prepared to pay higher interest rates for additional loans, thereby failing to take issuing external equity into consideration to stay in control. This can curb the development of the company, which eventually influenced the firm's profitability. Especially in industry with high fixed costs like real estate, expanding in size might be necessary to keep competitive in the market. Therefore, firms' size had a statistically positive impact on profitability of the firms in Real Estate industry.

**ASSET TURNOVER:** Furthermore, Asset Turnover was proposed to have a positive influence on firms' profitability. This result was in line with researches from numerous authors including Albayrak and Akbulut (2012), Singh's (2012), Erawati (2013) and Balili (2016) stating that there was a positive linkage between asset turnover and profitability. This implied that sales growth had an evidently positive influence on profitability of firms in this industry. The acceleration in Sales indicated that Higher asset turnover ratio means that companies generate more revenue per dollar of assets. Conversely, if company had a low asset turnover ratio, firms were not efficient at utilizing their assets to generate sales. In fact, enterprises in real estates sector tend to have huge asset bases and low asset turnover. In addition, this research suggested that corporates might undergo a decrease in their marketing cost as a percentage of sales, also the demand for the real estate properties of customers would surge since in order to encourage enterprises to supply houses for low-income people, the State has made a policy of lending capital according to the preferential regime. In the period of 2013 - 2016, the State provided support for lending to social houses through a preferential credit package of VND 30,000 billion. Corporates could take this advantage to rise price and earn more profits, firms' asset turnover had a statistically positive impact on profitability of the firms in Real Estate industry.

**ASSET GROWTH:** Asset Growth was an internal determinant of businesses' profitability. Specifically, there was an unclear and insignificant relationship between two ratios. This meant the profitability was not affected no matter how total asset would grow. In fact, this result was different from the pecking order theory stating that high growth opportunities of an enterprise would be expected to demand more debt financing in the future because a high asset growth rate signifies that the firm is able to generate more value as well as profit from its investment chance. This theory was supported by Lee, Smith and Schomburg (2000) that high-growth companies achieving substantial market share would generate economies of scale, which eventually contribute to higher profitability. On the contrary, some theoretical studies advocate the negative correlation between a firm's asset growth and profitability as proved by trade-off theory such as Eriotis et al (2007), Cooper et al (2009) and Gurcharan (2010). According to trade-off theory, companies with greater growth chances tend to maintain a low debt ratio, which indicated an inverse relationship between growth and profitability. However, based on the result of this study, no significant connection was proved between firm's asset growth and profitability. This result had similar conclusion of a study conducted by Roper (1999), Gschwandtner (2005), Martin et al (2010) and Federico and Capelleras (2015) who observed no significant association between asset growth and profitability in a sample of young manufacturing companies. As a result, firms' growth had an insignificant impact on profitability of the firms in Real Estate industry.

**DEBT RATIO:** When it comes to capital structure, debt ratio (TDTA) was the last internal determinant of profitability. As the result showed, TDTA had statistically negative with firm profitability (ROA and ROE). This outcome was contrary to hypothesis of this study that TDTA positively or insignificant influence on firm profitability. The irrelevance theory conducted by Modigliani and Miller (1958) as well as Sam and Heng (2011) claimed that no evidence could be proved in terms of relationship between those variables. Additionally, from the study of Abor (2005) investigate the relationship between capital structure and business's profitability in Ghanaian concept, a remarkably positive association between TDTA and profitability was illustrated. However, based on the analyzation of this study, it would be reasonable that real estate firms mainly operate by a huge amount of long-term debt rather than short-term debt, which made these enterprises would take many years to pay off. Hence, a great deal of their capital might be allocated in interest payment instead of other profitable areas. Furthermore, this result is more in line with the Pecking order theory that support the idea of utilizing own capital first and solely resort to debt financing whenever the primary choice is no longer capable. Also, the finding of this study was consistent with Amidu (2007), Tian and Zeitun (2007), Murray and Vidhan (2009), Mahfuzah Salim and Raj Yadav (2012), Abduljeleel Badmus Olayiwola (2014), Ho Thi Ngoc Thuy (2015) who pointed out the inverse association between capital structure and profitability. When businesses are profitable, they often tend to increase undistributed profits to reinvest in order to expand the scale as well as be the source to help businesses grow best in the future. Hence, firms' TDTA had a statistically negative impact on profitability of the firms in Real Estate industry.

## 5. Conclusion

The main aim of this study would be to investigate the impact of several selected variables on the profitability of the listed firms in Real Estate Industry on HOSE. In this research, the influence of firm size, growth, liquidity, asset turnover and TDTA on firms' profitability through two main financial ratios ROA and ROE were analyzed. The data for this study was collected from websites of 34 listed firms in Real Estate Industry on HOSE from 2010 to 2018 including their balance sheet and income statements. In order to evaluate the impacts of the independent variables on the dependent variables, the Fixed and Random effect models are utilized to conduct in this paper.

The emperical results illustrated that firm size, liquidity, asset turnover had stastically positive association with profitability while the firm's TDTA showed a negative impact on profitability of the listed firms in Real Estate Industry on HOSE. In addition, there was an unconscious relationship between firm growth and firm profitability of the listed firms in Real Estate Industry on HOSE.

The emperical results of this study are summarized in the below table :

Variables and relevant hypothesis	Expected relationships	Outcome	Conclusion	Previous studies with same results
Size (H1)	+	+	Accept	Collins and Preston (1969), Myers and Majkuf (1983), Ozgulbas et al.(2006), Papadognas (2007), Faris (2010), Salman & Yazfandar (2012), Pervan & Visic (2012) and Bambang et.al (2013).
Growth (H2)	-	-	No significant	Roper (1999), Gschwandtner (2005), Martin et al (2010) and Federico and Capelleras (2015)
Liquidity (H3)	+	+	Accept	Bhunia et al (2011), Takon Samuel Manyo and Vera N.Ogakwu (2013), Victor Curtis Lartey et al (2013), Uwalomwa (2013) and Zaid et al (2014)

Asset Turnover (H4)	+	+	Accept	Albayrak and Akbulut (2012), Singh's (2012), Erawati (2013) and Balili (2016)
Total debt to Total Asset (H5)	+	-	Reject	Amidu (2007), Tian and Zeitun (2007), Murray and Vidhan (2009), Mahfuzah Salim and Raj Yadav (2012), Abduljeleel Badmus Olayiwola (2014), Ho Thi Ngoc Thuy (2015)

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