

The Impact of Working Capital Management on the Profitability of the Listed Real Estate Companies in Vietnam

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Abstract: Working capital management plays an important role in the success of the business as it affects profitability and liquidity. Especially in real estate businesses, when the capital of the business mainly invested in inventory and financing of the receivables. This study is concerned with the impact of working capital management on the profitability of Vietnamese real estate firms, period (2011 - 2018). Research results show that real estate businesses need to effectively manage receivables, quickly re-invest cash from activities in new inventory assets in order to limit the downsizing in the future, contribute to increasing corporate profits. In addition, the study also found that firm size and financial leverage have a positive impact on profitability.

Keywords: Working Capital Management, Profitability, Real Estate Companies.

1. Introduction

The real estate market of Vietnam fluctuates in a sloped – up sinusoid cycle¹. Following the periods of a sharp increase in real estate for a short period (from 2000 to 2002 and from 2011 to 2013), the real estate market had “frozen” for a longer time (from 2003 to 2006 and from 2011 to 2013). After every fluctuating cycle, the price of the real estate is getting higher and higher about several times. In recent years, the price was increasing by 50% compared to the original price when the salary of the population was only increasing from 7% to 8% a year². Therefore, real estate investment is also a highly profitable channel in Vietnam³, so the number of real estate companies has skyrocketed since 2017⁴.

Working capital management is one of three important financial decisions because it directly affects to business's return and liquidity, playing a role in creating wealth for shareholders (Raheman & Nasr, 2007; Naser et al, 2013). Working capital management's objectives are to make sure to maintain working capital appropriately (without over surplus and shortage situation which affects badly the company's return and liquidity) (Filbeck & Krueger, 2005). In real estate companies, the working capital is very high, concentrated in their cash items, inventory, and firm's huge receivables. Finding the sources of funding to meet the working capital demand as well as how to establish the working capital investment plan to meet the growing demand of the business is managers' significant problem. With the capital structure of the real estate industry focusing largely on working assets, effective working capital management is

also a vital issue for businesses.

Researches about the impact of working capital management on the profitability of the listed companies were carried out in the past by many authors (Akoto et al, 2013; Kasozi, 2017; Napompech, 2012; Ahmad et al, 2017; Iqbal et al, 2014,...) but in real estate businesses there are only a few countries. Dalayeen's study (2017) in Jordan shows the significant impact of working capital management on real estate company profits. Firmansyah et al (2018) in Indonesia also confirms the strong impact of working capital management on the profitability of businesses. Thus, our study will complement new discoveries about working capital management in the real estate field. Especially, they are important for real estate businesses when they are struggling to find effective working capital management.

The two main objectives of this study are: (1) Determining the impact of working capital management policies on the profitability of the listed real estate companies; (2) Proposing solutions to improve working capital management efficiency in real estate companies to contribute to improving the profitability of companies.

2. Literature review

The impact of working capital management policies on profitability is researched very much on listed companies in many countries. Dong and Su's study (2010) on companies listed on the Vietnamese stock exchange (2006 – 2008) confirms cash conversion cycle negatively impacts on profitability. The study also shows that average payable days outstanding positively impacts on profitability. These findings imply that the company's profit reduces when the company increases the average age of inventory and days of sales outstanding. Chatterjee (2010) researched over 30 companies listed on the London stock exchange which confirms that there is a negative relationship between variables representing working capital management and

¹<https://vietnambiz.vn/nhin-lai-nhung-thang-tram-thi-truong-bat-dong-san-viet-nam-hon-30-nam-qua-20190723122323111.htm>

²<http://thanhnienviet.vn/2020/01/06/muc-tang-gia-bat-dong-san-vuot-xa-muc-tang-truong-thu-nhap>

³<http://landtoday.net/fast500-nganh-bat-dong-san-tang-truong-nhanh-d5852.html>

⁴<https://baodautu.vn/so-luong-doanh-nghiep-bat-dong-san-tang-manh-trong-nam-2017-d74712.html>

profitability. This shows that the current working capital management situation of enterprises is ineffective, leading to limiting the increase in the company's profits.

Similar to the research results of Dong and Su (2010), the study of Kuraduman et al (2010) researched the sample of 140 random companies listed on the Istanbul stock exchange (2005 – 2008) also shows the negative impact of inventory and accounts receivable on profit. However, extending the payment term will contribute to increasing profits for the company. Therefore, the study again confirms the importance of effective working capital management that will contribute to increasing profits for companies.

In addition to the approaches to working capital management through days of sales outstanding, the average age of inventory, average payable days outstanding or cash conversion cycle affect the business's return (Dong & Su, 2010; Kuraduman et al., 2010; Mathuva (2009) Raheman & Nasr, 2007, Lazaridis & Tryfonidis, 2006), there are a number of studies approaching working capital investment policies. Example: research's Afza and Nazir (2009) confirms the significant negative relationship between a firm's profits and the level of investment (or investment policy) in working capital. The study also points out that the working capital investment policy depends on the industry of each company. Afza and Nazir (2009) support the prudent working capital investment policy because it makes the company's profit increase safer. Agree with this view, Falope and Ajilore (2009) also support a prudent working capital investment policy that is safer for business because the working capital demand is different which depends on the firm size.

Based on the preliminary results of the impact of working capital management policies on corporate profits, most of the affirmation of the negative impact of the cash cycle, the average number of days in stock and the average period of money collection came. profit.

Based on the extracted results of the impact of working capital management policies on profitability, most of the studies affirm the negative impact of the cash conversion cycle, average days of inventory, and days sales outstanding on profits. Nevertheless, average payable days outstanding positively affect profits. The studies also affirm working capital depending on each business sector. Besides, Dalayeen's research (2017) in Jordan shows that the real estate companies' inventory turnover negatively affects profits. This result is different from the general results of the company. This implies that with the continuous upward trend of real estate prices, it is not the real estate business that sells quickly that can increase the profits of the business but still ensure the size of goods such as before. All of the pieces of evidence prove that the real estate field can have specific working capital management policies, which can contribute to increasing profits for a company.

3. Methodology

3.1 Model

The relationship between working capital management and profitability is studied following the approach of Akoto et al (2017) in the real estate business environment.

$$y_{it} (\text{Profitability}) = f (\text{indicators representing working capital}) + \beta_i Z_{it}$$

The profitability of the business (y) studied is using the return on equity (ROE), taking interest in return for shareholder. Indicators representing working capital include:

- Managing accounts receivable is reflected by receivable turnover (rt), which is determined by receivables divided into revenue;
- Managing inventory is reflected by inventory turnover (it), which is determined by inventory divided into cost of goods sold;
- Managing cash is studied to use 3 indicators from the cash flow statement, including cash from operating activities (oa), cash from investing activities (ia), and cash from financing activities (fa). However, to agree on the size of the indicators in the research model, the cash flow indicators are calculated in proportion to the company's return in the same period.

Z_{it} factor is the control variable, supplementing the model to reduce error in research. It includes the other factors, which are not indicators about working capital but it can impact on company's profitability based on basic theories or experimental studies.

- Benefit earning power – bep, reflects the operating profit made from a unique invested asset, which affects the profitability of the business. Benefit earning power is determined by Earning before Interest and Tax on Total Assets.
- The character of the real estate is using high financial leverage to affect profitability (Nguyen et al., 2019; Rudin et al., 2016). Therefore, this study supplement factors to reflect the financial leverage estimated by ratio of debt to total assets (lev).
- The firm size (size) affecting profitability is also studied (Dalayeen, 2017; Gill et al, 2010; Akbas & Karaduman, 2012; Dogan, 2013), usually using the decimal logarithm indicator of revenue. To correlate with the size of the data, the study uses the revenue indicator compared to the company's total assets, similar to Akoto et al (2013), Lazaridis, and Tryfonidis (2006).

Assembling the model's factors:

$$y_{i,t} = \beta_0 + \beta_1 \cdot rt_{i,t} + \beta_2 \cdot it_{i,t} + \beta_3 \cdot oa_re_{i,t} + \beta_4 \cdot ia_re_{i,t} + \beta_5 \cdot fa_re_{i,t} + \beta_6 \cdot bep_{i,t} + \beta_7 \cdot lev_{i,t} + \beta_8 \cdot size_{i,t} + \mu_{i,t} \quad (1)$$

3.2 Data

Researching data is secondary, collected from the financial statements of 48 joint stock companies listed on 2 stock exchanges of Vietnam in the real estate industry. The data source is very reliable due to being provided by Thomson Reuters. The data are collected from many real estate

companies from 2011 to 2018, which is suitable for a change period of the real estate industry, the beginning is the time of the freezing market (2011 – 2013), the next time is a period of recovery and strong growth. Companies with less than 4 years of data are removed from the research sample. Thus, the research sample appreciated by Stata software is the strong balance sample.

3.3 Method

The first step is descriptive statistics analysis to get an overview of the profitability and working capital management situation of companies in the sample. The second step is determining the correlation coefficients of the variables in the model, testing for autocorrelation and heteroscedasticity. The final step is comparing the results of estimating the regression coefficients, reasoning to select the most appropriate estimating method to overcome auto correlation and heteroscedasticity (if any). This study uses the regression method based on the fixed effect model – FEM. After comparing to randomly estimating results (Random effect model – REM) or Pooled Ordinary Least Squares – POOLED OLS.

4. Results and discussion

4.1. Descriptive statistics

The descriptive statistics presented in Table 1 show that the fluctuation in profitability for shareholders of real estate companies is too large. The highest profit reaches 76.59% of

the Vingroupgroup, while the company with the highest loss of 82.15% belongs to the 584 company. Besides, the fluctuation of the real estate companies’ receivable turnover ratio, inventory turnover is large. It shows that the real estate business has not only a high profit but also high risk.

Table 1: Descriptive statistics

Variable	Obs	Mean	Std.Dev	Min	Max
y	335	1.278	9.699	-82.155	76.594
rt	376	26.474	246.883	-4.078	3,832.915
it	376	28.606	217.283	-1.504	2,694.312
oa_re	382	-0.194	7.435	-105.576	70.560
ia_re	381	-0.102	5.927	-70.448	83.903
fa_re	373	0.218	3.409	-27.334	32.259
bep	335	0.546	2.023	-2.865	19.847
lev	335	0.588	0.295	0.040	2.096
size	381	5.369	16.698	0.0001	162.314

Source: Results from the author’s research.

Testing the correlation coefficient between the independent and dependent variables is shown in Table 2. The results show that almost all the variables have a low correlation (less than 0.6 according to Evans, 1996). However, there are a number of pairs of variables that are quite strongly correlated, such as the company’s size, financial leverage, and basic earning power are strongly and positively correlated with return on equity; inventory turnover is strongly and positively correlated with receivable turnover. This shows that the above pairs of variables will act in the same direction

Table 2: Correlation matrix

Variable	y	rt	it	oa_re	ia_re	fa_re	bep	lev
rt	-0.591***							
it	-0.433***	0.786***						
oa_re	0.106*	0.037*	0.028					
ia_re	-0.285***	0.151***	0.131**	-0.377***				
fa_re	0.100*	-0.150***	-0.116**	-0.518***	-0.279***			
bep	0.735***	-0.671***	-0.557***	0.020	-0.290***	0.232***		
lev	0.608*	0.193***	0.264***	0.103	0.005	-0.052	-0.107*	
size	0.617***	-0.167***	-0.058	0.211***	-0.239***	-0.007*	0.374***	0.145***

Source: Results from the author’s research.

4.2. Test autocorrelation and heteroskedasticity

Testing model (1)’s autocorrelation and heteroskedasticity is shown in Table 3. Hypothesis H₀: The model has no autocorrelation or the model has no heteroskedasticity. The test results show that the p-value of Wooldrige test for autocorrelation in panel data = 0.080 > 5% should be accepted the H₀ hypothesis, the model has no autocorrelation. Besides, Breusch-pagan / Cool-Weisberg test for heteroskedasticity with p – value = 0.253 > 5% should be accepted the H₀ hypothesis, the model has no heteroskedasticity.

Table 3: Test for autocorrelation and heteroskedasticity

Test	P_value
Wooldrige test for autocorrelation in panel data	0.080
Breusch-pagan/Cool-Weisberg test for heteroskedasticity	0.253

Source: Results from the author’s research.

4.3. Estimating regression coefficients for the research model Experimental research results

According to the results of testing data errors based on the research model (1), there is no phenomenon of autocorrelation or heteroskedasticity. Then, The study compares the estimating results according to POOLED OLS to REM to select the appropriate estimating method. The comparing result of 2 estimating methods shown in Table 4 is shown that both of them are homogeneous. Breush and Pagan Lagrangian multiplier for random effects test value shows that P-value = 1 > 5%, thus it should be selected the POOLED OLS method.

Table 4: Compare the results according to POOLED OLS or FEM model

Dependent variable	POOLED OLS		REM	
	Coef.	P_value	Coef.	P_value
rt	0.008	0.757	0.008	0.757
it	-0.005	0.813	-0.005	0.813
oa_re	-0.268	0.212	-0.268	0.212
ia_re	0.109	0.590	0.109	0.590
fa_re	-0.174	0.508	-0.174	0.508
bep	2.197	0.000	2.197	0.000
lev	0.874	0.585	0.874	0.585
size	0.844	0.000	0.844	0.000
const	-0.539	0.606	-0.539	0.606
Breush and Pagan Lagrangian multiplier test for random effects			P_value = 1.000	

Source: Results from the author's research.

After that, comparison POOLED OLS to FEM according to the result in Table 5 to select the best estimating method. F test for Fixed effects coefficient shows that $p_value = 0.000 < 5\%$, thus it should be selected.

Table 5: Compare the results according to POOLED OLS or FEM model

Dependent variable	POOLED OLS		FEM	
	Coef.	P_value	Coef.	P_value
rt	0.008	0.757	0.045	0.095
it	-0.005	0.813	-0.039	0.102
oa_re	-0.268	0.212	-0.394	0.044
ia_re	0.109	0.590	0.161	0.384
fa_re	-0.174	0.508	-0.632	0.796
bep	2.197	0.000	1.002	0.005
lev	0.874	0.585	5.718	0.041
size	0.844	0.000	1.761	0.000
const	-0.539	0.606	-2.751	0.106
F test for Fixed effects				P_value = 0.000

Source: Results from the author's research.

The estimating result of the regression coefficient by the fixed effect method (FEM) shows that the receivables turnover has a positive impact on the profitability of the 10% significant level, similar to the research results of Akoto et al. (2013), Dong and Su (2010), Kuraduman et al. (2010), Mathuva (2009). The cash flow from operating activities negatively affects the profitability of the business. Similar to Dalayeen (2017), the study also identifies that inventory turnover negatively impacts on the profitability of businesses at a meaningful level of nearly 10%. These are reflecting indicators related to working capital management in real estate businesses. Besides, basic earning power, financial leverage, and firm size all positively impact the profitability of businesses, similar to the research results of Akoto et al. (2013), Chatterjee (2010). Their regression coefficients are all significantly less than 5%. However, the research results did not find statistical evidence on the relationship between cash flow from investment and activities and cash flow from financial activities affecting the profitability of companies.

5. Finding and Conclusion

The empirical research on the impact of working capital management on the profitability of the listed real estate companies in Vietnam (2011 – 2018) shows that:

- Vietnamese real estate businesses mainly sell goods on installments. Therefore, the expansion of the market by strongly financing in the form of installment sales and managing accounts receivables well will contribute to boosting profits.
- The general trend of real estate is a rise in price over time, even after fluctuating periods, the real estate price increases in a sloped – up sinusoid⁵. The research result shows that operating cash flow and inventory turnover all have a negative impact on the profit increase. It shows when the company sold most of its inventory, the operating cash flow increasing but not reinvesting in new goods in time would decrease profits in the next period.
- Financial leverage in real estate companies has a positive impact on the profitability of companies. The basic earning power and firm size have a positive impact on the profitability of companies to increase the company's profitability. It shows the strength of real estate companies in the future is an indispensable trend for the existence and development of companies. Real estate companies have effectively used the impact of leverage and scale on their profitability.

To sum up, the problem of working capital management in companies is a big challenge for managers. Like other companies, real estate companies always would like to quickly sell out their inventory to reinvest in new goods, thus they strongly fund real estate installment sales. However, when the amount of money earned from operating activities is not in time or not enough to reinvest in new goods, the enterprise must face the problem of increasing the price of goods (real estate) input. Therefore, although a company has quite high profitability after each business cycle, the company has to supplement the capital to maintain reinvestment of the size of goods. This makes real estate company is always under pressure of using high financial leverage, increasing risks for companies.

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