

Effect of Net Working Capital Management on the Profitability of Energy Business Companies Listed on the Stock Market of Vietnam



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ABSTRACT: The purpose of this study is to investigate the impact of net working capital management (NWC) on profitability for 29 energy companies listed on the Ho Chi Minh Stock Exchange (HOSE) and Hanoi Stock Exchange (HNX), using panel data for six years from 2016 to 2021. The author conducts regression analysis with panel data; Feasible Generalized Least Squares (FGLS) method is subsequently undertaken to deal with the phenomena of heteroscedasticity and autocorrelation. Regression results from the FGLS method show that four components of working capital, including Days payable outstanding (DPO), Days sales outstanding (DSO), have statistically significant negative effects on profit figures (using ROS metric), Cash conversion cycle (CCC) has a statistically significant positive impact on profitable (ROS). But the research results show that there has no relationship between the number of days of inventory outstanding (DIO), Current Ratio (CR), the profitability (ROS). Based on the results, the author reconfirms the relationship between net working capital management and profitability, as well as provides energy trading companies in Vietnam with solutions to NWC effectively in order to enhance firms' value, especially in such an uncertain economic condition that is easily vulnerable to war or pandemic.

KEYWORDS: Net working capital management, Profitability, Return on assets, Energy Business Companies, FGLS

I. INTRODUCTION

Net working capital management (NWC) is vital in corporate finance governance. It manages short-term investment and financing sources to seek the optimal balance between profitability and liquidity (Makori & Jagongo, 2013).

Management of net working capital, particularly short-term asset management and efficient short-term debt management, is one of the essential responsibilities of every financial manager in every industry. Studies by Deloof (2003), Gill et al. (2010), Makori & Jagongo (2013), Oseifuah & Gyekye (2016), Kasozi (2017), Iqbal & Wang (2018), Mabandla & Makoni (2019), and have demonstrated that effective net working capital management has a direct effect on the profitability of businesses.

With a short life (within a business cycle or within one year), working capital rotates quickly, changing form throughout different stages of the product and business life cycle: From the initial form of cash, converting into supplies, goods, and materials for trading (at commercial companies) or for production (at manufacturing companies); then becoming work-in-progress, semi-finished or finished products; and finally back to the original form of cash. After each business cycle, the value of working capital is converted entirely into the value of finished goods, goods or services. This process takes place on a regular and continuous basis, creating the flow of capital for the firms to develop and generate profitability. Therefore, the relationship between NWC management and the financial performance of the firms has attracted the interest of many scholars, such as Sharma & Kumar (2011); (Nyamao et al, 2012); (Makori & Jagongo, 2013), (Raza et al., 2015), (Oseifuah & Gyekye, 2016), (Kasozi, 2017).

II. LITERATURE REVIEW

Working capital management is a crucial aspect of a company's financial affairs, having a direct, positive effect on the company's profitability and liquidity. Profitability and liquidity are opposite sides of the same coin. Optimal levels of liquidity ensure that a company pays its short-term obligations, and a profitable business can guarantee proper cash flow management. Liquidity denotes the capacity of a business to meet its short-term obligations. A company must optimize its liquidity and profitability while conducting daily operations. Net working capital management includes balancing the proportion of working capital

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components, such as accounts receivable, inventory, and accounts payable, and efficiently using cash and cash equivalents for daily business operations (Agha, 2014).

By using the cash conversion cycle (CCC) to measure net working capital management for a sample of 1,009 large Belgian non-financial firms from 1992 to 1996. The author discovered an inverse relationship between gross operating profit and days of receivables turnover, inventory turnover, and accounts payable turnover. Based on an observed sample of 88 companies listed on the New York Stock Exchange between 2005 and 2007, Gill et al. (2010) also determined that this negative relationship was statistically significant (Deloof, 2003).

Sharma & Kumar (2011) examined 263 companies listed on the Bombay Stock Exchange (BSE) From 2000 to 2008 and discovered a negative correlation between return on assets and both the days of payable and the days of inventory turnover and a positive correlation between return on assets and days of receivable and the cash conversion cycle.

Nyamao et al. (2012) conducted empirical research to evaluate the effects of NWCM on the financial performance of 113 small-scale enterprises (SSEs), including 72 commercial enterprises and 41 manufacturing ones, in Kenya. The results show that most SSEs did not apply formal NWCM governance processes, and their financial performance could be better. The study also shows that the financial performance of SSEs has a positive relationship with the efficient management of cash, receivables and inventory. The study concluded that NWCM impacted the financial performance of SSEs and recommended that SSE managers apply an effective NWC governance system to improve their financial performances and survive in uncertain business environments.

Makori & Jagongo (2013) analysis of the effect of net working capital management on corporate profitability in Kenya from 2003 to 2012. The balance sheet information of five manufacturing and construction firms listed on the Nairobi Stock Exchange (NSE) is used for this purpose. The relationship between net working capital management and firm profitability was determined using ordinary least squares and correlation regression models based on Pearson. This study discovered a negative correlation between cash conversion cycle profitability, cash equivalents, and average collection period but a positive correlation between profitability, inventory days, and average payment period. In addition, financial leverage, revenue growth, the current ratio, and the company's size substantially affect a company's profitability. Based on this study's key findings, it was determined that a company's board of directors could create value for their shareholders by reducing the daily amount of accounts receivable. Management can also create value for shareholders by maintaining a reasonable inventory level. As long as they do not strain their relationships with their creditors, businesses may also take a long time to pay their debts. Companies can achieve sustainable competitive advantage by efficiently and effectively using the organization's resources and reducing the cash conversion cycle to a minimum. It is anticipated that firms' profits will increase.

By using quantitative methods to test numerous research hypotheses and discovered a positive relationship between the cash conversion cycle and corporate profitability; a negative relationship between liquidity and profitability; a highly significant negative relationship between average collection time and profitability; in addition, the authors discovered a significant positive relationship between average payment time and profitability and a significant negative relationship between daily sales revenue and profitability. According to the authors, working capital management is one of a company's most crucial financial decisions. Regardless of the type of business, a company requires a sufficient working capital level in order to function properly (Ponsian et al.,2014).

Khalid et al. (2014) studied nine chemical companies listed on the Pakistan Stock Exchange from 2001 to 2009 to investigate the impact of quick ratio, current ratio, debt-to-equity ratio and debt-to-total assets ratio (measures of liquidity and solvency) on the profitability of the business (measured via ROS). The results of the regression model analysis show that the solvency ratios have a positive impact, and the remaining factors have a negative impact on the profitability of the business.

According to a study on six manufacturing companies listed on the Nigerian stock market from 2006 to 2013, Lawal & Abiola (2015) found a significant negative relationship between three components of working capital (including average collection period, inventory turnover in days and creditors payment period) and firms' return on investment (ROI). From the results, the author recommends that companies should develop an NWC policy to manage accounts receivable, inventory and accounts payable at a possible optimal level.

Kasozi (2017) examined trends in NWCM and its impact on the financial performance of 69 manufacturing companies listed on the Johannesburg Stock Exchange from 2007 to 2016, using different regression estimators. The findings show that DSO and DPO have a statistically significant negative effect on profitability, implying that firms effectively managing accounts receivable and paying creditors on time can perform better than companies that do not. In addition, a statistically significant positive relationship between DIO and profitability also suggests that the companies stocking up and maintaining their inventory are less likely to experience out-of-stock situations and liquidity problems. It is not possible to say whether a shorter or longer cash

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conversion cycle enhances a company's profitability because the findings supporting this premise are weak. However, the study shows that manufacturing firm carried a lot of debt in their capital structure, on average.

Iqbal & Wang (2018) found an NWCM diversion effect on profitability when analyzing the impact of NWCM on profitability. They focus entirely on the cash conversion cycle, significantly impacting the NWCM. In addition, they emphasize full attention on the money conversion cycle which has a huge effect on NWC governance. From the study, they recommend that the company can improve profitability by enhancing NWCM, using some methods such as short-term payments, invoicing and credit rating investigations regularly, reducing collection time and applying an effective credit policy.

Mabandla & Makoni (2019) conducted a study to investigate the link between NWCM and the financial performance of 12 food and beverage companies listed on the Johannesburg Stock Exchange of South African stock market from 2007 to 2016. The research found positive relationships between inventory conversion time, average payment time and profitability, as well as a negative relationship between average collection period and profitability. These findings show that financial managers of companies need to apply an aggressive NWC governance to improve financial results and bring greater value to shareholders.

Research by Phan & Nguyen (2020) analyzes and evaluates the factors affecting the profitability of textile enterprises listed on the Vietnam stock market in the period 2009 - 2018. Research results show that the factors of business size, the operating time of the business, revenue growth, solvency, and total asset turnover have a positive impact on the profitability of the business. In addition, financial leverage and market concentration have a negative impact on profitability. Macro factors such as GDP growth rate and inflation rate have no statistically significant effects on profitability.

Nguyen et al. (2021) studied the period 2011-2020 for 18 telecommunications companies listed on the Vietnamese stock exchange. The research results show that DSO, DIO, DPO, and CCC have a significant negative effect on profitability ratios. The findings of this study suggest that telecommunications companies should implement a customer credit assessment process and construct a rigorous receivables management process, thereby reducing the collection period.

3. STUDY DESIGN AND METHODOLOGY

3.1 Research model

Based on the results from many previous researches summarized in Table 1, the author investigates separately the effects of four basic components of working capital (including Days inventory outstanding-DIO, Days payable outstanding - DPO, Days sales outstanding - DSO and Cash conversion cycle - CCC) on firms' profitability, considering the effects of other firms' characteristics such as firm size - SIZ, sales growth - GRO, current ratio - CR. Hence, the study uses quantitative research methods involving the estimation of the following regression equations:

$$ROS = f(DSO, DIO, DPO, CCC, CR, SIZ, GRO)$$

$$\text{Model 1: } ROS_{i,t} = \alpha_0 + \alpha_1 * DSO_{i,t} + \alpha_2 * CR_{i,t} + \alpha_3 * SIZ_{i,t} + \alpha_4 * GRO_{i,t} + \epsilon_{i,t}$$

$$\text{Model 2: } ROS_{i,t} = \alpha_0 + \alpha_1 * DIO_{i,t} + \alpha_2 * CR_{i,t} + \alpha_3 * SIZ_{i,t} + \alpha_4 * GRO_{i,t} + \epsilon_{i,t}$$

$$\text{Model 3: } ROS_{i,t} = \alpha_0 + \alpha_1 * DPO_{i,t} + \alpha_2 * CR_{i,t} + \alpha_3 * SIZ_{i,t} + \alpha_4 * GRO_{i,t} + \epsilon_{i,t}$$

$$\text{Model 4: } ROS_{i,t} = \alpha_0 + \alpha_1 * CCC_{i,t} + \alpha_2 * CR_{i,t} + \alpha_3 * SIZ_{i,t} + \alpha_4 * GRO_{i,t} + \epsilon_{i,t}$$

where *i* denotes firms (cross-section dimensions) ranging from 1 to 24, *t* denotes years (time-series dimensions) ranging from 1 to 6, ϵ is the error term of the model and $\alpha_1, \alpha_2, \alpha_3, \alpha_4$ is the coefficients of regression models.

Variables

Return on sales (ROS) is used as dependent variable and a proxy for profitability of the firms.

NWCM is measured through four variables, including Days inventory outstanding (DIO), Days payable outstanding (DPO), Days sales outstanding (DSO) and Cash conversion cycle (CCC), Current Ratio (CR) being considered as independent variables in the study's models.

In addition, the control variables of SIZ and GRO, as proposed by many researches listed in Table 1, will be added to all four models to estimate other causal effects of firms' characteristics on profitability, such as current ratio, size and age of business or net sales growth rate.

Details of how the variables are calculated are explained in Table 2 below.

Table 2. Summary of Variables.

No	Variables	Abbreviation	Measurements
1	Return on sales	ROS	Profit after tax/Net sales
2	Days sales outstanding	DSO	Average accounts receivable*365/Net sales

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3	Days inventory outstanding	DIO	Average inventory*365/Cost of goods sold
4	Days payable outstanding	DPO	Average accounts payable*365/Cost of goods sold
5	Cash convention cycle	CCC	DSO + DIO - DPO
6	Current Ratio	CR	Currents assets/current liabilities
7	Firm size	SIZ	ln (total assets)
8	Sales Growth	GRO	Net Sales (i) -Net Sales (i-1)/Net Sales (i-1)

Source: Author

Hypothesis

Hypothesis 1:

H₀: There is no significant relationship between DSO and profitability (ROS) of energy trading companies listed on Vietnam stock market in the period 2016-2021.

H₁: There is a significant relationship between DSO and profitability (ROS) of energy trading companies listed on Vietnam stock market in the period 2016-2021.

Hypothesis 2:

H₀: There is no significant relationship between DIO and profitability (ROS) of energy trading companies listed on Vietnam stock market in the period 2016-2021.

H₁: There is a significant relationship between DIO and profitability (ROS) of energy trading companies listed on Vietnam stock market in the period 2016-2021.

Hypothesis 3:

H₀: There is no significant relationship between DPO and profitability (ROS) of energy trading companies listed on Vietnam stock market in the period 2016-2021.

H₁: There is a significant relationship between DPO and profitability (ROS) of energy trading companies listed on Vietnam stock market in the period 2016-2021.

Hypothesis 4:

H₀: There is no significant relationship between CCC and profitability (ROS) of energy trading companies listed on Vietnam stock market in the period 2016-2021.

H₁: There is a significant relationship between CCC and profitability (ROS) of energy trading companies listed on Vietnam stock market in the period 2016-2021.

Hypothesis 5:

H₀: There is no significant relationship between CR and profitability (ROS) of energy trading companies listed on Vietnam stock market in the period 2016-2021.

H₁: There is a significant relationship between CR and profitability (ROS) of energy trading companies listed on Vietnam stock market in the period 2016-2021.

3.2 Research methodology

To conduct the research for panel data, the author used Pooled OLS, Random effects model (REM), Fixed effect model (FEM) at the same time. However, to select the most suitable model for the study, the author does F-test to choose between Pooled OLS and FEM, do Breusch–Pagan test to choose between Pooled OLS and REM and do Hausman-test to choose between REM and FEM. Moreover heteroscedasticity test (using Breusch–Pagan test) and residual analysis with autocorrelation (Wooldridge test) are also conducted on the selected model. In the case of heteroscedasticity or autocorrelation, or both of them, Feasible Generalized Least Squares (FGLS) will be applied.

3.3 Research data

The sample for research is collected from audited financial statements with sufficient data from 29 energy trading companies for the period of 2016 to 2021, generating 174 firm-year observations of panel data. Source of data is officially from Hochiminh Stock Exchange (HOSE) and Hanoi Stock Exchange (HNX) of Vietnam.

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4. RESULT

4.1 Descriptive Statistics

Descriptive Statistics present the mean, standard deviation (SD), minimum and maximum value of all variables used in the research model as following.

Table 3. Descriptive Statistical Analysis.

Variable	Obs.	Mean	SD	Minimum	Maximum
Dependent variable					
ROS	174	.1081491	.8953271	-10.76317	.6850241
Independent variables					
DSO	174	201.7404	885.0445	3.855185	11166.6
DIO	174	81.27288	380.8779	0	3847.802
DPO	174	375.7953	2019.654	4.108437	26441.45
CCC	174	-92.78197	1218.314	-15245.18	3711.651
CR	174	2.275497	2.431136	.0012153	16.01863
Control variable					
SIZ	174	11.9053	.8017847	8.566009	13.54869
GRO	174	.4094072	3.549519	-.9486923	42.15182

Source: STATA 17 output

Table 3 shows that with 174 observations of 29 listed energy trading companies in the sample over a 6-year period, the average ROS is 0.1081 with a standard deviation of 0.895 of which, the company with the lowest ROS is -10.763 and the company with the highest ROS is 0.685. The average value of DSO, DIO, DPO and CCC, CR are 201 days, 81 days, 375 days and -92 days, 2.275, respectively. In terms of control variables, firm size and net sales growth rate have average values of 11.905 and 0.4094 (40,94%), respectively.

4.2 Correlations Analysis

Correlations Analysis is conducted to measure and evaluate the strength of linear relationship between two variables for all variables in regression models of the study. The results of analysis are detailed as follow.

Table 4. Correlation coefficient matrix.

Variable	DSO	DIO	DPO	CCC	CR	SIZ	GRO	ROS
DSO	1.000							
DIO	0.0499	1.000						
DPO	0.6833	0.0269	1.000					
CCC	-0.6880	0.3043	-0.9357	1.000				
CR	0.0322	-0.0510	0.0210	-0.0479	1.000			
SIZ	-0.4583	-0.0826	-0.4417	0.3551	-0.1961	1.000		
GRO	-0.0184	-0.0404	-0.0174	-0.0013	-0.0461	0.0023	1.000	
ROS	-0.5576	-0.0027	-0.2992	0.1943	0.0544	0.3119	0.0206	1.000
Sig	0.0000	0.0382	0.0003	0.0196	0.0000	0.093	0.0527	

Source: STATA 17 output

According to the correlation matrix among the variables in Table 4, the independent variables of DSO, DIO, DPO have a negative relationship and CCC, CR have a positive relationship significantly with ROS. In particular, DSO, DIO, DPO, CR have correlation with ROS at a high significance level of 1%, whereas DIO and CCC have correlation with ROS at a significance level of 5%. These relationships indicate that if the company reduce the time to collect receivables from customers, inventory turnover time and payment time to suppliers and increase cash conversion cycle, the profitability can be improved.

In addition, the relationship between control variables and ROS shows that SIZ and GRO have a positive relationship with ROS. This means that high liquidity and the big size of the business will have an effect on increasing the profit of the company. Meanwhile, a high net sales growth rate will have a positive impact on profitability.

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4.3 Regression Analysis

Table 5. The results of from Pooled OLS regression model

Variable	Model 1	Model 2	Model 3	Model 4
DSO	-0.00104*** (-48.10)			
DIO		0.0000894 (0.52)		
DPO			-0.000430*** (-35.61)	
CCC				0.000621*** (21.28)
CR	0.0185** (2.58)	0.0544** (1.98)	0.0272** (2.88)	0.0442** (3.09)
SIZ	-0.167*** (-6.71)	0.405*** (4.79)	-0.0738** (-2.32)	0.0877* (1.90)
GRO	-0.00468 (-0.97)	0.0202 (1.10)	-0.000218 (-0.03)	0.00945 (0.98)
_cons	2.268*** (7.45)	-4.855*** (-4.72)	1.086** (2.80)	-0.983* (-1.75)
R- Square	0.9402	0.5228	0.8967	0.7612
Adj R -Square	0.9388	0.5020	0.8942	0.7556
Prob > F	0.0000	0.0000	0.0000	0.0000
Obs.	174	174	174	174

Source: STATA 17 output

Notes: *, **and *** denote the significance level at 10%, 5% & 1%, respectively.

According to the results in Table 5, CCC, CR have positive effects on ROS, whereas DSO and DIO have negative effect on ROS. And the results show that have no relationship between DIO and ROS.

In particular, DSO, DPO and CCC have a very strong impact at a significance level of 1%, and the effects of CR on ROS have a significance level of 5%, respectively. The relevance of Model 1, 2, 3 and 4 (based on Adj R - Square) is 93,88%, 50,20%, 89,42%, 75,56%, respectively.

The value of (Prob > F) in all four models are 0.0000, showing that the models are suitable for the study.

4.4 Test for autocorrelation

The author uses the Wooldridge Test by executing the xtserial command in STATA17 To check whether autocorrelation occurs. Wooldridge Test has the following hypotheses:

H0 : The model does not occur autocorrelation

H1 : The model occurs autocorrelation

If P value (Prob>Chi 2) = 0.0000 < 0.05, then the null hypothesis is rejected and the model has autocorrelation and vice versa. The results of the autocorrelation test are shown in the table below.

Table 6: Autocorrelation test results.

	Model 1	Model 2	Model 3	Model 4
F(1, 28)	164.769	12.345	364.284	24.087
Prob > chi2	0.0000	0.0000	0.0000	0.0000

Source: STATA 17 output

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According to the results of Table 6, the P value (Prob>Chi²) of the models 1,2,3,4 are all less than (<) 0,05. Thus, the null hypothesis is rejected, showing that the phenomenon of autocorrelation among the variables in the research models has occurred.

4.5 Heteroscedasticity analysis

The author uses the White test, executing the command `imtest, white` in STATA17 to check whether heteroscedasticity occurs,. The White test has the following hypotheses:

H0 : The model does not occur the phenomenon of heteroscedasticity.

H1 : The model occurs the phenomenon of heteroscedasticity.

If P value (Prob>Chi²) is < 0.05, then the null hypothesis is rejected, the model has heteroscedasticity and vice versa. The results of the heteroscedasticity test are shown in the table below.

Table 7: heteroscedasticity test results

	Model 1	Model 2	Model 3	Model 4
Chi2(14)	122.11	88.11	156.69	140.24
Prob > chi2	0.0000	0.0000	0.0000	0.0000

Source: STATA 17 output

According to the results of Table 7, the P value (Prob>Chi²) of models 1,2,3,4 are all = 0.0000 < 0.05. Thus, null hypothesis is rejected, showing that there has been a phenomenon of heteroscedasticity in the research models.

4.6 Hausman test

The author use Hausman test to choose between FEM and REM regression methods for panel data of the research sample,. Hypothesis is tested as follows:

H0 : There is no correlation between the explanatory variables and the random component.

H1 : There is a correlation between the explanatory variables and the random component.

The author conduct Hausman test for all 4 regression models with STATA17 software. If P value (Prob>chi² = 0.000 < 0.05), the null hypothesis is rejected, then using REM is not as reasonable as using FEM is. The results of Hausmen test show that P value (Prob>chi²) of the four models are all less than 0.05, meaning that hypothesis H0 is rejected and Hausman test's result shows that choosing FEM will be better than REM to conduct regression of all four research models.

Table 8. Rationale of model selecting

Type of inspection	P-value	Model selection	Conclude
F-Test	0.0000	FEM is more suitable than Pooled OLS	Select FEM model
Breusch–Pagan test	Model 1,2,3,4: 0.0000	REM is more suitable than Pooled OLS	
Hausman test	Model 1: 0.0001	FEM is more suitable than REM	
	Model 2: 0.0003		
	Model 3: 0.0000		
	Model 4: 0.0001		

Source: STATA 17 output

However, when conducting FEM test for 4 models, there is still autocorrelation and heteroscedasticity. Therefore, the author continues to use FGLS (Feasible Generalized Least Squares) estimator to handle.

4.8 Estimating FGLS

In order to estimate the results unbiasedly and efficiently, the author use the Feasible Generalized Least Squares (FGLS) to handle the phenomenon of autocorrelation and heteroscedasticity in all four models.

Table 9. FGLS estimation results.

Variables	Model 1	Model 2	Model 3	Model 4
DSO	-0.000913*** (-14.86)			
DIO		0.0000388		

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		(0.43)		
DPO			-0.000346*** (-10.76)	
CCC				0.000510*** (9.06)
CR	0.00300 (0.99)	0.0125 (0.82)	0.00479 (1.05)	0.00538 (0.92)
SIZ	-0.155*** (-9.42)	0.0866 (3.75)	-0.117*** (-5.28)	-0.0462 (-0.83)
GRO	0.0161* (1.80)	0.0894** (1.98)	0.0255** (2.37)	0.0523*** (3.48)
_cons	2.123*** (10.21)	-0.842 (-0.45)	1.607*** (5.77)	0.715 (1.07)
Obs.	174	174	174	174

Source: STATA 17 output

Notes: *, ** and *** denote the significance level at 10%, 5% & 1%, respectively.

5. DISCUSSION

The regression results of FGLS estimation in Table 9 are used to discuss the research results of models 1, 2, 3 and 4 as follows. For the days sales outstanding (DSO) in research model 1, there is a negative impact on ROS with a significance level of 1%, implying that the sooner customers pay their debts, the more money the company has on hand to reinvest and contribute to enhance profitability of energy trading companies. The results of this study also coincide with some previous researchers such as: Makori & Jagongo (2013), Jamil et al. (2015), Lawal & Abiola (2015), Ngo (2017), Bui (2017), Kasozi (2017), Mabandla & Makoni (2019), Shubita (2019) and Mabandla & Makoni (2019).

Days payment outstanding (DPO) in research model 3 has a very strong negative effect on ROS with a significance level of 1%. This results are also consistent with the studies of by Jamil et al. (2015), Lawal & Abiola (2015), Ngo (2017), Mbella & Ngongan (2018) and Uguru et al. (2018). The research results imply that energy companies need to strictly manage payments, ensuring on-time payments, avoiding overdue, which will affect the company's reputation, thereby contributing to the growth of profitability of energy trading companies.

In term of cash conversion cycle (CCC), Model 4 shows a positive effect of CCC on ROS at a statistically significant level of 1%. implying that the company increase CCC, it contribute to enhance profitability of energy trading companies. This effect is also consistent with previous studies of Sharma & Kumar (2011), Makori & Jagongo (2013), Jamil et al. (2015), Oseifuah and Gyekye (2016), Ngo (2017), Mbella & Ngonngan (2018) and Uguru et al. (2018). The results implies that if the company shortens the cash conversion period, it can increase profitability.

The research results show that, there is no relationship between the number of day inventory outstanding (DIO), Current Ratio (CR), the profitability.

For control variables such as net sales growth rate (GRO) and company size (SIZ), all of them have a statistically significant positive impact on ROS.

6. CONCLUSION

According to the regression results from FGLS estimation in Table 9 and the discussions in Section 5, days sales outstanding and days payment outstanding have a significantly negative impact on ROS at the significance level of 1%, cash conversion cycle has positive effects on profitability of companies at the significance level of 1%, respectively. In conclusion, hypothesis H₁ of three models (models: 1,3,4) is rejected, indicating that there is a separately significant relationship between DPO, DSO, CCC and the profitability of energy trading companies listed on Vietnam stock market in the period 2016-2021. But there is no relationship between the number of day inventory outstanding (DIO), Current Ratio (CR) with the profitability, so hypothesis H₁ of two models (models: 2,5) are accepted.

The research results imply that companies should implement effective policies to reduce debt collection time, inventory days, debt payment time to suppliers and cash conversion time to increase the profitability and value for shareholders.

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