Finans Ekonomi ve Sosyal Araştırmalar Dergisi, Cilt.6 Sayı.4, Aralık 2021
Research of Financial Economic and Social Studies, Vol.6 No.4, December 2021
ISSN : 2602 – 2486

ÇALIŞMA SERMAYESİ YÖNETİMİNİN İŞLETME KARLILIĞINA ETKİSİ: BORSA İSTANBUL İMALAT SEKTÖRÜ UYGULAMASI[1]

THE EFFECT OF WORKING CAPITAL MANAGEMENT ON PROFITABILITY: BORSA ISTANBUL MANUFACTURING SECTOR CASE[2]

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Araştırma Makalesi */ Geliş Tarihi:16.11.2021*
Kabul Tarihi: 31.12.2021

Öz

İşletmelerin amaçlarını gerçekleştirebilmeleri, tam kapasite ile çalışabilmeleri ve kârlı bir şekilde büyümelerini devam ettirebilmeleri için çalışma sermayesinin etkili yönetimi son derece önemlidir. Çalışmada, BİST (Borsa İstanbul)'de faaliyet gösteren 102 imalat sanayi firmasının 2010-2018 yılı çeyrek dönemlik verileri, panel veri analizi ile incelenmiştir. Çalışmada kârlılık ölçütü olarak alınan Aktif Kârlılığı ile çalışma sermayesi ölçütlerinden olan Alacak Tahsil Süresi, Borç Ödeme Süresi, Nakde Dönüşüm Süresi ve Kaldıraç Oranı ile negatif yönlü; Cari Oran ve Firma Büyüklüğü arasında da pozitif yönlü bir ilişki olduğu tespit edilmiştir.

Anahtar Kelimeler: Çalışma Sermayesi, Firma Kârlılığı, İmalat Sanayi, BİST, Panel Veri Analizi.

JEL Sınıflaması: G30, G31, M10.

Abstract

Efficient working capital management is of vital importance for companies to reach their goals, work at full capacity, and sustain their growth in a profitable way. In this study, the 2010-2018 quarterly data of the 102 manufacturing companies operating on BIST (Borsa Istanbul) have been analyzed through panel data analysis. This study reveals that there is a negative relation between ROA, which is taken as a profitability metric, and Days Sales Outstanding (Average Collection Period), Accounts Payable Period, Cash Trading Period (Cash Cycle) and Leverage Ratio, which are among working capital metrics and that there is a positive relation between Current Ratio and Company Size.

Keywords: Working Capital, Firm Profitability, Manufacturing Sector, BIST, Panel Data Analysis.

JEL Classification: G30, G31, M10.

[1] **Bibliyografik Bilgi (APA):** FESA Dergisi, 2021; 6(4), 886-896 / DOI: 10.29106/fesa.1024583
[2] This study is derived from the master's thesis written by Esad Zürare ERDOĞAN under the supervision of Prof. Sibel YILMAZ TÜRKMEN.
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1. Introduction

Companies have certain objectives such as managing and sustaining their profit, continuing their activities at full capacity, and serving the public. Thus, they aim to maximize their value in line with these objectives. It is important for managers to manage the working capital efficiently so that the company can achieve its goals (Erdinç, 2008:227).

Working capital refers to a company's assets and expenditures which are intended to uninterruptedly continue the company's production activities at full capacity, sustain its profitable growth and maintain its current activities and which can be turned into cash in a short period (Akgüç, 1998:201). While managing the working capital, which consists of cash, securities, receivables, inventories, and other current assets that can be turned into cash within a year, it is required to elaborate on not only the components of current assets but also the relationship between short term liability components and the components of current assets.

It is extremely important for companies to finance short-term assets with short-term liabilities and long-term assets with long-term liabilities to balance risk and profitability at a reasonable level and thus continue their activities (Türkmen, 2017:245-246). In companies, the cycle which starts cash ends with cash. In fact, cash is required throughout the entire cycle: from the purchase of raw materials, which are necessary for production, to labor cost, which is necessary for the processing of raw materials; from labor cost to storage and sales. This cycle can run more than once throughout a year, but in any case a cycle has to be completed within maximum a year (Aksoy & Yalçıner, 2008:16-17; Brealey & Stewart, 1984:622; Berk, 2015). Throughout this cycle, cash outflow results from the purchase of raw materials, labor cost, financing cost, and storage cost whereas cash inflow occurs from the selling of the goods that have been produced. As a result, working capital is in constant change and interaction.

It is quite important for a company to follow the developments in its working capital so that it can remain informed about the liabilities and receivables for the periods ahead, take precautions in advance and develop strategies accordingly. It is assumed that just as a lack of working capital might cause some troubles, an excessive working capital might also create costs succeeded by problems for a company. The amount of working capital that a company needs depends on the business line and sector it is operating in. Companies with a sufficient amount of working capital are accepted to be strong (Hatiboğlu, 1986:252-253). The components of working capital get even more important, especially in countries like Turkey, where capital markets are still developing and short-term borrowing exceeds long-term borrowing (Söylemez, 2020:2498-99).

This study covers a general introduction to the topic followed by a literature review part, which contains references to the previous studies on working capital. In the next part, the effect of working capital on profitability is tested on the manufacturing companies listed on the Istanbul Stock Exchange and the findings are presented. The study ends with a conclusion part.

2. Literature Review

This part covers some studies on the effect of working capital on profitability, primarily on companies operating in the manufacturing sector.

Öz and Güngör (2007) examined the 1992-2005 data of 68 manufacturing companies listed on the Istanbul Stock Exchange through panel data analysis. A negative relationship was detected between profitability and days sales outstanding, days inventory outstanding, days payable outstanding, and cash conversion cycle while a positive relationship was observed between the sales growth and financial tangible assets.

Yıldız (2009) analyzed the 1992-2008 data of 68 manufacturing companies listed on the Istanbul Stock Exchange through panel data analysis. It was concluded that there was a negative relationship between gross sales profitability and days sales outstanding, days payable outstanding, days inventory outstanding, cash conversion cycle, and financial debts; and there was a positive relationship between firm size and financial tangible assets/total assets and profitability.

Akbulut (2011) examined the 2000-2008 data of 127 manufacturing companies through regression analysis. As a result, it was revealed that there was a negative relationship between return on total assets and days sales outstanding, days inventory outstanding and cash conversion cycle while there was a positive relationship between asset size, leverage ratio, and sales growth rate.

Aygün (2012) examined the 2000-2009 data of 107 manufacturing companies listed on Istanbul Stock Exchange through regression analysis. While a positive relationship was detected between return on assets and cash conversion cycle, firm size, and current ratio, a negative relationship was observed among days sales outstanding, days inventory outstanding, and days payable outstanding.

Dursun and Ayrıçay (2012) examined the 1996-2005 data of 120 manufacturing companies listed on the Istanbul Stock Exchange through panel data analysis. As a result, it was revealed that there was a negative relationship between gross profitability and days sales outstanding, days inventory outstanding, days payable outstanding, and cash conversion cycle.

Vural et al. (2012) examined the 2002-2009 data of 75 manufacturing companies listed on the Istanbul Stock Exchange through panel data analysis. It was concluded that there was a negative relationship between gross operating profit and days sales outstanding, cash conversion cycle, leverage ratio, firm value and there was a positive relationship with firm capacity.

Karabay (2013) examined the 1996-2011 financial data of the companies operating in the clothing industry through regression analysis. This study demonstrated that there was a negative relationship between gross operating profit and days sales outstanding, days payable outstanding, cash conversion cycle, and current ratio.

Türkmen and Söylemez (2019) analyzed the 2010-2017 data of the iron, steel and metal companies listed on the Istanbul Stock Exchange and found out a positive and meaningful relationship between return on total assets and acid test ratio, current/total assets, and working capital turnover; a meaningful and negative relationship between accounts receivable turnover and return on total assets.

Raheman and Nasr (2007) examined the 1999-2004 data of 94 Pakistani companies through regression analysis. They detected a negative relationship between net operating profitability and days sales outstanding, days inventory outstanding, days payable outstanding, cash conversion cycle and leverage ratio, financial assets/total assets, and a positive relationship with firm size.

Makori and Jagongo (2013) studied the 2003-2012 data of 5 manufacturing and construction companies listed on Kenya Nairobi Stock Exchange. They observed a negative relationship between return on assets and days sales outstanding, cash conversion cycle, and liability ratio; a positive relationship between days inventory outstanding, days payable outstanding, sales growth rate, and firm size.

Enqvist et al. (2014) examined the 1990-2008 data of 1136 Finnish companies through regression analysis. They found out that there was a negative relationship between return on assets and cash conversion cycle, days inventory outstanding, liability ratio and firm size, and a positive relationship with the current ratio.

Malik and Bukhari (2014) examined the 2007-2011 data of 38 companies operating in cement, chemistry, and engineering sectors through panel data analysis. They concluded that there was a negative relationship between return on equity and days payable outstanding and a positive relationship with cash conversion cycle.

Ayub (2015) examined the 1999-2007 data of 138 textile companies listed on Karachi Stock Exchange through regression analysis. He found out a positive relationship between net operating profitability and gross working capital turnover and a meaningless relationship between days sales outstanding, days inventory outstanding, days payable outstanding, cash conversion cycle, current ratio, and firm size.

Prembeh and Peprah-Amankona (2020) examined the effect of working capital management on profitability with a focus on the manufacturing companies listed on Ghana Stock Exchange for the period of 2011-2017 and detected a positive linear relationship. Besides, they confirmed the conclusion that an aggressive working capital management increases a company's profitability.

Seth et al. (2020) carried out a study on 563 Indian companies for the period of 2008-2018 and found out that there is a meaningful relationship for leverage, net fixed asset ratio, profitability, total assets turnover ratio, total asset growth ratio and cash conversion cycle.

Swarni et al. (2020) carried out research on 414 non-financial companies between 2012 and 2018 and focused on the relationship between working capital and corporate performance considering the companies' field of activity. It has been observed that efficient working capital management has a meaningful effect on corporate performance.

Nguyen et al. (2020) carried out a study on 119 non-financial companies listed on the Vietnamese Stock Exchange for the period of 2010- 2018 and concluded that optimizing working capital in a way to control the components of the cash conversion cycle might increase the profitability of a company.

3. Research

3.1. Data Set

The objective of this research is to detect if there is any relationship between the working capital management of manufacturing companies listed on the Borsa Istanbul (Istanbul Stock Exchange-BIST) and their profitability

and to determine the direction and level of such a relationship if there is any. In this research, the quarterly financial data of the 102 manufacturing companies that continually operated between 2010 and 2018 have been analyzed through panel data analysis. The data were obtained from the official website of KAP (Public Disclosure Platform) and Microsoft Excel, Eviews 10.9, Stata 12.0 and R were used as software programs.

It is seen that cross-sectional data analysis and time series data analysis are frequently used in studies in which economic data are analysed in line with a data set. Time series data analysis helps to examine a company's data for certain periods, namely the time aspect, whereas cross-sectional data analysis helps to examine the changes in a company per unit time, namely the cross-sectional aspect. However, a panel data set analysis is required for mixed data sets, where both time series and cross-section series are used. Compared to time series data and cross-sectional data, panel data sets produce more complicated but more consistent results. At this point, it is necessary to pay attention to the fact that cross-sectional data and time series data are at the same time dimension and consist of the same units (Güriş et al., 2013:7).

3.2. Variables and Model

In this study, Return on Total Assets is taken as a profitability metric, and Days Sales Outstanding, Days Inventory Outstanding, Days Payable Outstanding, and Cash Conversion Cycle are taken as a working capital metric. Leverage Ratio, Current Ratio and Firm Size are used as control variables.

Table 1. Variables, Abbreviations and Explanations

Variable	Abbreviation	Explanation of the Variable
Dependent Variable		
Return on Assets	ROA	$\frac{Net\ Profit}{Total\ Assets}$
Independent Variables		
Days Sales Outstanding	DSO	$\frac{Receivables}{Sales} x365$
Days Inventory Outstanding	DIO	$\frac{Inventories}{Cost\ of\ Goods\ Sold} x365$
Days Payable Outstanding	DPO	$\frac{Accounts\ Payable}{Cost\ of\ Goods\ Sold} x365$
Cash Conversion Cycle	CCC	DSO + DIO – DPO
Control Variables		
Leverage Ratio	LR	$\frac{Total\ Debt}{Total\ Assets}$
Current Ratio	CR	$\frac{Current\ Assets}{Current\ Liabilities}$
Firm Size	FS	Ln Sales

The below-mentioned equation model was used within the framework of the variables in the research.

$$AK_{it} = \alpha + \beta_1(\text{DSO}_{it}) + \beta_2(\text{DIO}_{it}) + \beta_3(\text{DPO}_{it}) + \beta_4(\text{CCC}_{it}) + \beta_5(\text{LR}_{it}) + \beta_6(\text{CR}_{it}) + \beta_7(\text{FS}_{it}) + \varepsilon_{it} \quad (1)$$

Here are the explanations of the variables used in the equation:

DSO_{it} = Days Sales Outstanding of the company i in the period t

DIO_{it} = Days Inventory Outstanding of the company i in the period t

DPO_{it} = Days Payable Outstanding of the company i in the period t

CCC_{it} = Cash Conversion Cycle of the company i in the period t

LR_{it} = Leverage Value of the company i in the period t

CR_{it} = Leverage Value of the company i in the period t

FS_{it} = Firm Size of the company i in the period t

ε_{it} = Stochastic Error Term

3.3. Findings

The descriptive statistics of the variables used in the model are examined in Table 2.

Table 2. Descriptive Statistics of the Variables

	DSO	DIO	DPO	CCC	LR	CR	FS
Average	186.8896	198.9641	153.5450	232.3088	0.494772	1.776189	19.38248
Median	140.5976	132.9715	113.9663	159.8242	0.494445	1.486442	19.26872
Maximum	1357.873	3091.403	1058.393	3553.089	1.183483	9.094484	24.87822
Minimum	1.251131	1.938443	5.567371	-280.7188	0.070127	0.209669	12.87399
Std. Deviation	150.3724	228.5546	130.4221	275.6001	0.206512	1.026905	1.698471
Skewness	1.979307	5.208687	2.156593	3.316524	0.175164	2.345175	-0.008625
Kurtosis	9.096140	47.93401	9.327459	23.69428	2.462111	11.11224	3.514432

The preliminary examination of the variables has revealed that there is no problem apart from DIO and the maximum values of CCC that are related to DIO. Whether these differences would create a problem will be explained in the findings part. It is seen that there are trend and seasonality effects; however, it is thought that the effects of trend and seasonality can be avoided by using first level differences.

Table 3. Correlation Matrix for Variables

	FDSO	FDIO	FDPO	FCCC	FLR	FCR	FS
FDSO	1.000000	0.356542	0.441649	0.402796	0.293013	-0.277798	-0.462806
FDIO		1.000000	0.387259	0.403193	0.127072	-0.115372	-0.437554
FDPO			1.000000	0.326465	0.174247	-0.157119	-0.836217
FCCC				1.000000	0.202712	-0.192148	-0.433540
FLR					1.000000	-0.361853	-0.203532
FCR						1.000000	0.205787
FS							1.000000

A correlation analysis was carried out by using the first level difference in order to detect whether there is a multicollinearity problem with the variables in the model. No multicollinearity problem was observed among the variables, and then the homogeneity test was carried out to detect whether there are slope coefficients in the cointegration equations that belong to the cross-sections constituting the panel, which is the first stage. The unit root test and cointegration test types are affected by the results of the homogeneity test.

First-generation unit root tests have two types, which are homogeneous and heterogeneous. The models based on the homogenous model assumption were developed by Levin et al. (2002), Breitung (2005), and Hadri (2000) whereas the models based on the heterogeneous model assumption were developed by Im, Pesaran, and Shin (2003), Maddala and Wu (1999) and Choi (2001).

Table 4. Paseran and Yamagata (2008) Homogeneity Test Results

	Test Statistics	Probability (p)
$\tilde{\Delta}$	7.451	0.001*
$\tilde{\Delta}_{adj}$	7.098	0.005*

*Shows the result of the variable on the meaningfulness level of 5%

H_0: Slope coefficients are homogenous.

H_1: Slope coefficients are not homogenous.

As the test revealed, because the result is $p < 0.05$, the H_0 hypothesis was rejected and it was concluded that slope coefficients are not homogenous. In this analysis, the first generation Im, Pesaran and Shin (2003), Maddala and Wu (1999) and Choi (2001) tests, which are based on the heterogeneity assumption, will be used.

Table 5. First Generation Panel Unit Root Test Results

Variables		Im et al. (2003)	Maddala and Wu (1999)	Choi (2001)
ROA	Level	-1.126(0.148)	9.521 (0.174)	-0.725(0.227)
	∇	-6.558(0.001)*	34.90(0.000)*	-6.984(0.000)*
DSO	Level	-0.975(0.192)	8.297(0.218)	-1.055(0.281)
	∇	-7.254(0.002)*	39.554(0.012)*	-12.711(0.000)*
DIO	Level	-1.288(0.155)	7.562 (0.197)	-0.743(0.175)
	∇	-9.953(0.001)*	45.062(0.000)*	-7.660(0.000)*
DPO	Level	0.889(0.184)	10.905(0.215)	-0.863(0.261)
	∇	-8.570(0.000)*	41.375(0.000)*	-7.042(0.000)*
CCC	Level	-0.923(0.197)	11.907(0.183)	-1.049(0.158)
	∇	-8.864(0.001)*	39.206(0.000)*	-6.372(0.000)*
LR	Level	-1.104 (0.138)	12.421(0.125)	-1.041(0.217)
	∇	-9.642 (0.000)*	43.645(0.000)*	-9.674(0.000)*
CR	Level	-0.742(0.203)	11.077 (0.181)	-1.271(0.129)
	∇	-8.655(0.002)*	39.163(0.000)*	-6.903(0.000)*
FS	Level	-1.246 (0.180)	12.275(0.122)	-1.105(0.225)
	∇	-9.502 (0.000)*	43.036(0.000)*	-9.531(0.000)*

Note:∇ shows the first level difference, and * shows stationarity. The deterministic specification of the tests is fixed and includes the trend. The probability values are given in parentheses. Tests have been done for 5% significance level. The H_0 hypothesis of the tests is that there is unit root. The optimal lag length was detected by using Schwarz information criterion.

As it is seen in Table 5, all variables have unit root in the level structure. Yet it gets stationary (1) for the first level difference.

It is necessary to detect whether there is dependence between cross sectional units in order to remove the deficiencies in the first generation stationarity tests. If there is no cross-sectional dependence, first generation unit root tests will be sufficient. However, if there is dependence, second generation unit root tests will provide more consistent and stronger estimations.

Cross sectional dependence is tested with one of the options below;

- If the time dimension is bigger than the cross sectional dimension$(T > N)$; Berusch Pagan (1980) $CD_{LM}1$ test is done.
- If the time dimension is equal to the cross sectional dimension$(T = N)$; Pesaran (2004) $CD_{LM}2$ test is done.
- If the time dimension is smaller than the cross sectional dimension$(T < N)$; ; Pesaran (2004) CD_{LM} test is done.

Since this study covers 102 companies$(N = 102)$ and 35 quarters $(T = 35)$, what we have is $T < N$, so Pesaran (2004) CD_{LM} was used. Table 6 shows the cross sectional test dependence results.

Table 6. Pesaran (2004) CD_{LM} Test Result

Variables		Pesaran (2004) CD_{LM} Test
ROA	t ist	8.431
	P	0.002*
DSO	t ist	8.906
	P	0.000*
DIO	t ist	8.543
	P	0.019*
DPO	t ist	9.375
	P	0.000*
CCC	t ist	10.667
	P	0.002*
LR	t ist	7.974
	P	0.000*
CR	t ist	11.852
	P	0.000*
FS	t ist	10.063
	P	0.000*

* shows the 0.05 significance level of the variable.

H_0: There is no cross-sectional dependence.
H_1: There is cross-sectional dependence.

As it is seen in Table 6, H_0 was rejected because $p < 0.05$; that is cross-sectional dependence was detected. This made it clear that second generation unit root tests should be applied.

The average of every unit root test statistics for each cross section is calculated and then CIPS (Cross Sectionally Augmented IPS), which is the unit root test statistic for the entire panel, is carried out.

Table 7. CIPS Statistic-Test Result

Variables	CIPS Statistic
ROA	-6.531*
DSO	-7.842*
DIO	-5.088*
DPO	-5.634*
CCC	-6.224*
LR	-5.871*
CR	-6.842*
FS	-5.521*

* Stationary series for first level difference

Note: For CIPS, the critical value for 5% significance level = -2.945, Pesaran (2007). The number of lags has been determined according to Schwarz Information Criteria. Trend+Stationary model was executed.

As seen in Table 7, because CIPS value is bigger than the table critical value, H_0 has been rejected and it was decided that there is no unit root in the series that constitute the panel when the first level difference is used. Thus, it was decided that second generation tests might help to reach stronger results.

As it is mentioned by Baltagi (2012), panel data sets should have one of the pooled fixed and random effects. Chow and Breush-Pagan (BP) tests are used to identify which panel regression is to be selected. In Chow test H_0 hypothesis is treated as pooled regression, and H_1 hypothesis is treated as FEM while in BP test H_0 hypothesis is treated as pooled regression, and H_1 is treated as REM.

Table 8. Panel Regression Estimation Method Selection Test Results

Test	Probability	Decision
Chow (F test)	0.016	H_0 rejected
BP(χ^2 test)	0.004	H_0 rejected

The rejection of H_0 hypothesis in both tests shows that there is a need to make a selection between REM and FEM models. At the next stage, a decision must be made between REM and FEM models with the help of Hausman test.

Table 9. Hausman Test Result

Test Summary	Chi Square Statistics	Chi Square	Probability
Cross-Section Random	10.262	6	0.173
Period Random	13.242	6	0.145
Cross-Section And Period Random	14.166	6	0.159

H_0: There is random effect. (REM)
H_1: There is no random effect. (FEM)

As seen in Table 9, because $p > 0.05$, H_0 hypothesis has been accepted that it has been decided that REM model would be appropriate. Among diverse algorithms, Cross Section SUR algorithm, which has the least error square, has been used.

Table 10. Panel Regression- Estimation Results

Dependent Variable:**ROA** Method: Panel EGLS (Two-way Fixed Effects) Sample: 2010.Q2-2018.Q3 Cross Section: 102 Total Panel Observation (Balanced): 3468				
	Coefficient	**Std. Error**	**t-statistics**	**Probability**
FDSO	-0.042298	0.001809	-23,38460	0.0000*
FDIO	-0.000367	0.000596	-0.615957	0.5380
FDPO	-0.057326	0.004362	-13,14322	0.0000*
FCCC	-0.107444	0.003545	-30,30640	0.0000*
FLR	-0.093946	0.004723	-19,89010	0.0000*
FCR	0.047549	0.001327	35.82596	0.0000*
FS	0.011821	0.000509	23.22935	0.0000*
Fixed	0.159884	0.010901	14.66670	0.0000*
R^2 = 0.568 F_{ist} = 28.562 F(p)= 0.000 DW=2.36				

Statistically meaningful variable at the *significance level of 0.05

The dependent variables in the model explain the ROA, which is the dependent variable, by 56.8%. All of the independent variables excluding DIO proved to be statistically meaningful. As DSO increases by 1%, ROA will decrease by 4.2%; as DPO increases by 1%, ROA will decrease by 5.7%; as CCC increases by 1%, ROA will increase by 10.7%. As LR increases by 1%, ROA will decrease by 9.3%; as CR increases by 1%, ROA will increase by 4,7%; as FS increases by 1%, ROA will increase by 1.1%.

As a conclusion, it was identified that all the variables except for Days Inventory Outstanding are in a meaningful relationship with Return on Assets. It was found out that Days Sales Outstanding, Days Payable Outstanding and Cash Conversion Cycle, which are among the dependent variables of Return on Assets, are in a negative relationship with Leverage Ratio, which is among the control variables; there is a positive relationship between Current Ratio and Firm Size. These conclusions overlap with the conclusions derived from the literature review.

As a result of the panel data analysis, the predicted model should provide some assumptions. These are the absence of autocorrelation and heteroscedasticity in the model. The existence of a relationship between successive values of the error term for diverse observations is defined as autocorrelation. Wooldridge (2002) test was applied to identify autocorrelation.

Table 11. Wooldridge Autocorrelation Test Result

F value	**Probability (p)**
383,129	0.173

H_0: There is no autocorrelation.

H_1: There is autocorrelation.

As it is seen in Table 11, because p>0.05, no autocorrelation was identified in the model.

Greene (2003) test was applied to test the existence of heteroscedasticity problem in the model.

Table 12. Greene Heteroscedasticity- Test Result

Chi Square (2)= 351.036 Probability Chi Square = 0.152

H_0: There is no heteroscedasticity.
H_1: There is heteroscedasticity.

As it can be seen in Table 12, because $p > 0.05$, the H_0hypothesis, which indicates there is no heteroscedasticity, was accepted. Thus, the findings that have been obtained through the analyses provide us with assumptions and are suitable for interpretation.

4. Conclusion

It is seen that it is extremely important for companies to properly plan and manage the level of working capital, which varies according to the operating cycle and business line so that they can ensure their sustainability in highly competitive markets.

In this research, the balance sheets and income tables of the 102 manufacturing companies that are listed on ISE and that continually operated between 2010 and 2018 have been analyzed and the findings have been examined.

As a result of the implementation, meaningful detection was observed in all variables except for Days Inventory Outstanding. However, a holistic approach should be adopted to elaborate on the fact that a considerable amount of Days Inventory Outstanding has turned out to be meaningless at the end of the literature review and there occurred deviations while statistics were being examined. It was concluded that Cash Conversion Cycle, Days Sales Outstanding, Days Payable Outstanding, which are independent variables, and Leverage Ratio, which is a control variable, are in a negative relationship with Return on Assets, whereas Current Ratio and Firm Size, which are among control variables, are in a positive relationship with Return on Assets. Briefly, the study has revealed that there is a significant relationship between working capital and profitability.

As a consequence, to determine the working capital which might change from company to company, the cash, sales, inventory, and payables of the companies should be analyzed, determined at the most appropriate level, and managed effectively. In prospective studies to be carried out with the Days Inventory Outstanding, attention should be paid to ensure that it keeps the same trend with other turnover variables and has no significant deviation. The studies where there is no deviation or the same trend is followed with other variables might yield more correct results.

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