

The Relationship between Working Capital Management and Profitability: Evidence from Turkey

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Abstract: *The purpose of this study is to examine the relationship link working capital management and performance such as profitability between accountant receivable period, accountant payable period and cash conversion cycle on Istanbul Stock Exchange (ISE) during the last ten years. This paper examines the relationship between working capital management and profitability. A sample of 120 Turkish manufacturing firms listed on ISE for a period 10 years from 2003 to 2012 was selected. Multiple linear regression models have been used to find out the relationship between working capital management and firm performance in the context of Turkey. The findings of this paper show a significant and negative relationship between account receivable period and return on asset, return on equity, operating profit margin and net profit margin in the manufacturing industry. We expect that managers can create value for shareholders by reducing accountant receivable period, accountant payable period, cash conversion cycle.*

Keywords: Working Capital Management, Cash Conversion Cycle, Inventory Conversion Period, Accountant Receivables Period, Accountant Payable Period

JEL Classification: G32, M40, M41

1. Introduction

Working capital is a financial measure used to assess corporate liquidity (Naser et al., 2013). Working capital management is considered to be a vital issue in financial management decision and it has its effect on liquidity as well as on profitability of the firm. Moreover, an optimal working capital management positively contributes in creating firm value (Baghci and Khamrui, 2012). Most projects require the firm to invest in net working capital. The main components of net working capital are cash, inventory, receivables, and payables. It does not include excess cash, which is cash that is not required to run the business and can be invested at a market rate (Berk et al., 2008).

The term working capital refers to the quantum of fund required to maintain day-to-day expenditure on operational activities of a business enterprise. It is actually required to run the wheels of the business (Mandal and Goswami, 2010). Working capital, in a financial statement context, means the current assets of a company. In turn, current assets are defined as assets expected to turn into cash within one year (Appuhami, 2008; Kaen, 1995). Working capital is needed for day-to-day operations of a firm (Napompech, 2012). The main objectives of working capital management are profitability and liquidity (Watson and Head,

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2004). We can therefore be expected that the way in which working capital is managed will have a significant impact on the profitability of firms conducted by Deloof (2003). Accordingly, we focus on whether impact of working capital management under firms profitability outcomes of ISE.

The management of working capital by managing the proportions of the working capital component is important to the financial position of business for all industries (Ganesan, 2007), because it directly affects the profitability of the firms. Working capital management, which consists of current assets and current liabilities management, is the main function of financial managers in all corporations (Mansoori and Muhammad, 2012; Ali and Ali, 2012). The management working capital may have both negative and positive impact of the firm's profitability, which turn, has negative and positive impact on the shareholders' wealth (Gill et al., 2010). Good working capital management is central to a firm's profitability and profitability is essential for firm's ability to pay dividends to shareholders (Oladipupo and Okafar, 2013). Effective working capital management lies on successful company, playing a important role in the increase of shareholder wealth. Likewise, good working capital management is one of the more common reasons for corporate successful.

The main objective of working capital is to ensure that firms have sufficient cash flow to continue normal operations in such a way that minimize risk of inability to pay short-term commitment. Moreover, managers should try to avoid from necessary investment in working capital. While more investment in working capital may reduce the risk of liquidity, insufficient amount of working capital may cause shortages and problems in daily operations (Mansoori and Muhammad, 2012). Working capital decisions provide a classic example of the risk- return nature of financial decision making. Increasing a firm's net working capital, current assets less current liabilities, reduces the risk of a firm not being able to pay its bills on time (Barine, 2012). The estimation of working capital of a firm is a difficult task for management because of its varying characteristics in a dynamic operating environment. It actually varies across the companies in an industry as well as over the period under considerations for a particular firm (Mandal and Goswami, 2010).

The utmost important components of working capital related to inventories, accounts receivables and accounts payables (Ross et al., 2002). One important current asset is accounts receivable. When one firm sells goods to another firm, it does not expect to be paid immediately. These unpaid bills, or trade credit, make up the bulk of accounts receivable. Another important current asset is inventory. Inventories may consist of raw materials, work in process, or finished goods awaiting sale and shipment. The remaining current assets are cash and marketable securities (Brealey et al., 1995).

Firms may have an optimal level of working capital that maximizes their value. Large inventory and generous trade credit policy may lead to high sales. The larger inventory also reduces risk of a stock-out. Trade credit may stimulate sales because it allows a firm to access product quality before paying (Gill et al., 2010). On the other hand, to reduce accounts receivable, a firm may have strict collection policies and limited sales credits to its customers. This would increase cash inflow. However the strict collection policies and limited sales credits would lead to lost sales thus reducing the profits. Minimizing inventory may lead to lost sales by stock-outs (Ganesan, 2007). Working capital management is the management of short-term financing requirements of a firm. This includes maintaining optimum balance of working capital components- receivables, inventory and payables- and using the cash efficiently for day to day. Optimization of working capital balance means minimizing the working capital requirements and realizing maximum possible revenue (Ganesan, 2007).

Efficient management of working capital helps to avoid financial crisis, thereby, increasing the profitability and enhances the firm value (Kaur and Singh, 2013).

We contribute to the literature by shedding light on the relationship link working capital management and performance such as profitability between accountant receivable period, accountant payable period and cash conversion cycle on ISE during the last ten years. An important issues in this regard is how working capital management of firms directly influence operating performance outcomes of corporate managers' decisions.

The remainder of this paper is structured as follows. The next section offers a summary of relevant strands of the extant literature. Section 3 presents the hypotheses development. Section 4 outlines present the research methodology for testing our hypotheses and data sample. Section 5 describes the empirical results and analysis and also conclusion follows.

2. Literature Review

In finance literature, importance of working capital management has been a common opinion among researchers. Some recent studies as the following:

Oladippupo and Okafor (2013) examined relative contribution of working capital management to corporate profitability and dividend payout ratio. Their findings observed that shorter net trade cycle and debt ratio promote high corporate profitability. Bose (2013) examined the trends in working capital management and its impact on firms' profitability. The results of this study indicate that means of the working capital management components widely vary within electric equipment sector. Kaur and Singh (2013) examined managing efficiency and profitability through working capital. Their findings show support earlier studies revealing that efficient management of working capital significantly impact profitability.

Arbidane and Ignatjeva (2013) examined the effect of working capital on profitability of Latvian manufacturing firms on sample of 182 firms for 2004-2010 was used. The results of the research that has been performed in relation to Latvian manufacturing enterprises confirm the existence of a correlation tie between components of working capital and profitability. Ahmadi, et al. (2012) investigated the relationship between working capital and profitability at companies of food industry group member Tehran Stock Exchange. The results of this study showed that there is a reverse relationship between variables of working capitals and profitability.

Karadađlı (2012) examined the effect of working capital management on the profitability of Turkish firms. The findings suggest that an increase in both the cash conversion cycle and the net trade cycle improves firm performance in terms of both the operating income and the stock market return for SMSs whereas for bigger companies a decrease in cash conversion cycle and net trade cycle is associated with enhanced profitability.

Charitou et al. (2010) investigated the effect of working capital management on firm's financial performance in an emerging market. Their results indicated that the cash conversion cycle and all its major components; namely, days in inventory, day's sales outstanding and creditors' payment period are associated with firm's profitability. Mandal and Goswami (2010) examined impact of working capital management on liquidity, profitability and non-insurable risk of ONGC, a leading public sector enterprise in India. They found that the overall financial health of a firm not only depends on the profitability of the concern but also it depends on the liquidity position of the firm. It is also observed that liquidity and profitability are two closely related concepts in financial management of a firm in the way of achieving its desired goals. Moreover the risk dimension of liquidity cannot be ignored in the measurement of overall performance of the risk.

The evidence is mixed on whether a relationship exists. For example, Arunkumar and Ramanan (2013) analyzed the effect of working capital management on profitability of manufacturing firms. They found that a positive relationship between profitability and debtors' day and inventory days. Rehman and Anjum (2013) examined the impact that the running assets management on the profitability of listed Pakistan cement sector. Their results proved that there is inverse and positive association between working capital management and profitability in cement industry of Pakistan.

A handful studies examine the performance effects of working capital management efficiency and find significant of profitability measures. For example, Ramana et al. (2013) investigated impact of receivables management on working capital and profitability in India during the between 2001 and 2010 year. The investigation revealed that the receivable management across cement industry is efficient and showing significant impact on working capital and profitability. Similarly, Gill et al. (2010) find that there is a significant association between cash conversion cycle and profitability.

Bagchi and Khamrui (2012) investigated the relationship between working capital and profitability. They find that there is a strong negative relationship between variables of the working capital management and profitability of the firm. There is also stumpy negative relationship between debt used by the firm and its profitability.

Another key study examines the performance effects of working capital management efficiency and finds no significant one. Prior research conducted by Owolabi and Alu (2012) examined working capital management and profitability. They found that each working capital management component affected the company’s level of profitability at varying rates, but these effects when pooled together are no significant.

Table 1 shows that summary of the prior research with working capital management as corporate performance and profitability.

Table 1. Litreature of Working Capital and Profitability

Author(s)	Findings
Mun and Jung (2015)	The findings ascertain a strong inverted U-shape relationship between working capital and profitability.
Hoang (2015)	There are significant negative relationships between cash conversion cycle, net trade cycle, average collection period, average inventory period, average payment period and return on assets.
Enqvist et al.(2014)	The impact of business cycle on the working capital-profitability relationship is more pronounced in economic downturns relative to economic booms.
Ukaegbu (2014)	The negative association implies that, when the cash conversion cycle increases, the profitability of the firm declines.
Manzoor (2013)	There are negative significant relationship between the account receivable days, stock days and firm’s size with profitability was found, while the relationship of leverage with profitability is positive and significant.
Tariq et al.(2013)	Cash conversion cycle, net trading cycle, number of days receivable have strong positive relation with performance and these are significant whereas, number of days inventory turnover and number of days payable turnover in days have negative relation with firm performance and is insignificant.
Majeed et al. (2013)	The average collection period of accountants receivables, inventory conversion period and cash conversion cycle have a negative relationship with firm’s performance.
Tufail et al. (2013)	Aggressiveness of working capital management policies is negatively associated with profitability.
Arshad and Gondal (2013)	There is significant negative relationship between working capital management and profitability of the firms.
Usama (2012)	There is significant positive effect of working capital management on profitability and liquidity of the firms.
Ali and Ali (2012)	There is a positive impact of working capital management on profitability, working capital on total assets and impact of total assets on profitability.
Onwumere et al. (2012)	There is a positive impact of both aggressive investment and financing capital working policies on profitability of Nigerian firms for the period the study covered.

Uremadu and Egbide (2012)	They found that positive of inventory conversion period, debtors' collection period; and a negative effect of cash conversion period, creditors' payment period, on return on assets.
Mansoori and Muhammad (2012)	They found that cash conversion cycle negatively associated to the return on asset (ROA).
Vural, Sokmen and Cetenek (2012)	Firms can increase profitability measured gross operating profit by shortening collection period of accounts receivable and cash conversion cycle.
Ogundipe et al. (2012)	There is a significant negative relationship between conversion cycle and market valuation and firm's performance.
Napompech (2012)	There is a negative relationship between the gross operating profits and inventory conversion period and the receivables collection period.
Ghaziani et al. (2012)	There are significant negative associations between working capital variables with profitability.
Salahi (2012)	There is a significant relationship between working capital changes and fixed assets with assets return statistically.
Sutanto and Pribadi (2012)	The result of this study indicates that only partially net working capital turnover has a significant effect on ROA.
Quayyum (2011)	The results of this study show significant level of relationship between the profitability indices and various liquidity indices as well as working capital components.
Haq et al. (2011)	There is a moderate relationship between working capital management and profitability in specific context of cement industry in Pakistan.
Azam and Haider (2011)	Working capital management has significant impact on firms' performance and it is concluded that managers can increase value of shareholder and return on asset by reducing their inventory size, cash conversion cycle and net trading cycle.
Rahman (2011)	Working capital management has a positive impact on profitability.
Bandara and Weerkoon (2011)	There is a statistically significant negative relationship between working capital management practice and market value added.
Saghir (2011)	There is statistically negative significance relationship between profitability, measured through return on asset and cash conversion cycle.
Mathuva (2010)	The key findings that a highly significant negative relationship between the times it takes for firms to collect cash from their costumers and profitability.
Mohamad and Saad (2010)	There are significant negative associations between working capital variables with firms' performance.
Danuletiu (2010)	There is a weak negative linear link between working capital management indicators and profitability rates.
Nimalathanasan (2010)	The results suggest that managers can increase profitability of manufacturing firms by reducing the number of day's inventories and accounts receivable.
Gill et al., (2010)	They found statistically significant relationship between the cash conversion cycle and profitability, measured through gross operating profit.

Raheman et al. (2010)	The cash conversion cycle, net trade cycle and inventory turnover in days are significantly affecting the performance of the firms.
Appuhami (2008)	Firm's capital expenditure has a significant impact on working capital management.
Şamiloğlu and Demirgüneş (2008)	The accounts receivable cycle, the inventory conversion period have negative impact on profitability, while growth effects firm profitability positively.
Ganesan (2007)	The result of study show that even though "days working capital" is negatively related to the profitability it is not significantly impacting the profitability of firms in telecommunication equipment industry.
Deloof (2003)	The negative relation between accounts payable and profitability is consistent with the view that less profitable firms wait longer to pay their bills.

Source: Author's own.

3. Research Methodology and Data

Profitability indicators are commonly used in evaluating the firm's operating performance. Specially, as monitors of financial position, these measurements are important because adequate returns are essential to sustaining the flow of capital resources to a depository institution. Traditionally, ROE, ROA and net profit margin are three basic ratios, which are widely used to evaluate the profitability of firm (Rose and Hudgins, 2005).

Specially, we evaluate firm performance indicators as profitability is measured by return on asset, return on equity, operating profit margin and net profit margin. Determinants of working capital include accountant receivable period, inventory conversion period, accountant payable period and cash conversion cycle. The control variables consist of firm size and firm leverage. Panel data and multiple linear regression models have been used to find out the relationship between working capital management and firm performance in the context of Turkey. We expect that there are significant and positive relationship between accountant receivable period, cash conversion cycle and return on asset, while there are insignificant and positive relationship between inventory conversion period, accountant payable period and return on equity. The general form of the model can be written as:

$$Y_{it} = \beta_0 + \beta_1 X_{it} + U_{it}$$

The following hypotheses guided the study:

- H₁: There is a negative relationship between ARP and ROA, ROE, OPM and NPM.
- H₂: There is a negative relationship between ICP and ROA, ROE, OPM and NPM.
- H₃: There is a negative relationship between APP and ROA, ROE, OPM and NPM.
- H₄: There is a negative relationship between CCC and ROA, ROE, OPM and NPM
- H₅: There is a positive relationship between firm size and ROA, ROE, OPM and NPM.
- H₆: There is a positive relationship between firm leverage and ROA, ROE, OPM and NPM.

The data set in this was obtained from the Istanbul Stock Exchange. The sample consisted of 120 firms that had all data for the ten- year period from 2003 to 2012. Therefore, data obtained from this study were panel data on 1200 firms' observations.

To analyze the impact of working capital management on firms' profitability, return on asset (ROA), return on equity (ROE), net profit margin (NPM) and the operating profit margin (OPM) were used as the dependent variables, while accounts receivable period (ARP), accounts payable period (APP), inventory conversion period (ICP) and cash conversion cycle (CCC) were used as the independent variables. On the other hand firm size and firm leverage were used as the control variables. The formulations of this variable are shown in the table 2.

Table 2. Descriptive of Data

Return on Asset (ROA)	Net Income(Loss)/ Average Total Asset
Return on Equity (ROE)	Net Income (Loss)/ Average Shareholder Equity
Operating Profit Margin (OPM)	EBIT/ Net Sales
Net Profit Margin (NPM)	Net Profit after Taxes/ Sales Revenue
Accountants Receivable Period (ARP)	365/Accounts Receivable Turnover
Inventory Conversion Period(ICP)	365/ Inventory Turnover Ratio
Accounts Payable Period (APP)	365/ Accounts Payable Turnover
Cash Conversion Cycle (CCC)	ARP+ICP – APP
Firm Size	Natural Logarithm of Firm's Sales, lagged one year period
Firm Leverage (FL)	Total Debt/ Total Asset

4. Empirical Result

4.1. Descriptive Statistics

Table 3 provides descriptive statistics of the collected variables. All variables were calculated using balance sheet (book) values. A sample of 120 Turkish manufacturing firms listed on Istanbul Stock Exchange for a period of 10 years from 2003 to 2012 was selected by randomly.

From Table 3 the mean value for ROA, ROE, OPM and NPM of the selected firms are 2.42%, -10.58%, 5.48 and 2.08 % respectively. The mean value of natural logarithms RCP, ITP, PDP and CCC of the selected firms are 1, 79; 1, 83; 1, 65 and 1, 96 respectively. From Table 2, whereas 52.16% of the total assets of the firms are financed by debts, 47.84% was generated from either equity finance or other internal sources. The average firm's size measured by logarithm of sales, lagged one-year period, and came to 8.2767 million. The average firm leverage is 52.16 %.

Variance inflation factor (VIF) used to assess the multicollinearity problems. All the VIF coefficients are less than 2 and tolerance coefficients are greater than 0.5. Thus it can be concluded that all of the independent variables are free from serious problems of multicollinearity for regression analysis.

We ensure that accounting data are obtained by balance sheet and income statement data for the sample. We consider not only net profit but also net loss in our analysis. In this context, as a result, we may find negative ROE in this sample.

Table 3. Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
ROA	1200	-2,88	,60	,0242	,14773
ROE	1200	-16,56	1,57	-,1058	1,40562
OPM	1200	-2,52	,81	,0548	,14855
NPM	1200	-3,22	1,00	,0208	,19517
RCP	1200	,57	2,99	1,7935	,29674
ITP	1200	,37	2,64	1,8368	,31483
PDP	1200	-,09	2,88	1,6583	,32220
CCC	1200	,00	3,54	1,9665	,48405
FS	1200	6,75	10,62	8,2767	,65681
TL_TR	1200	,03	8,67	,5216	,58424
Valid N (listwise)	1200				

4.2. Results of Regression Analysis

In the first regression model, the ARP has been regressed against ROA. In the second regression model, ICP has been regressed against the ROA. The third regression model involves a regression of the APP against the ROA. In the fourth regression model, the CCC is regressed against the ROA. Finally, the three working capital measures (ARP, ICP and APP) have been regressed together against the ROA.

Table 4. Regression Model Results (Dependent variable: Return on Asset)

Variable	Model 1		Model 2		Model 3		Model 4		Model 5	
	Coef.	Sig.	Coef.	Sig.	Coef.	Sig.	Coef.	Sig.	Coef.	Sig.
Intercept	-,111	-,205	-,218	,001	-,146	,008	-,194	,001	-,082	,226
ARP	-,047	,000							-,038	,005
ICP			-,006	,615					,003	,810
APP					-,040	,001			-,030	,022
CCC							-,009	,299		
FS	,033	,000	,035	,000	,034	,000	,035	,000	,032	,000
FL	-,097	,000	-,096	,000	-,090	,000	-,097	,000	-,092	,000
R-Squared	,192		,184		,190		,184		,196	
F-value	94,862	,000	89,756	0,000	93,806	,000	90,094	,000	58,128	,000
Durbin Watson	1,874		1,866		1,870		1,867		1,876	

Notes: Significant level at 5%; Model 1 represents regression result for ARP; 2 represents regression result for ICP; 3 represents regression result for APP, 4 represents for CCC and 5 represents ARP, ICP, APP.

From Table 4, F- Statistics is 94,862; 89,756; 93,806; 90,094 and 56,128 respectively and they show the overall significance of model. The values of DW test show that there is no problem of auto-correlation.

From Model 1, there is a negative and significant relationship exists between the ARP and ROA. The result is consistent with of Mansoori and Muhammad (2012). From Model 2, there is a negative relationship

exists between the ICP and ROA. This finding is consistent with the results of Azam and Haider (2011), Rehman and Anjum (2013). However, this result is not significant. From Model 3, there is a negative and significant relationship exists between the APP and ROA. Account payable period is highly significant at 1 percent level. It indicates that with increasing level of APP, ROA will be decreased -, 040 levels. This finding is consistent with the results of Egbide and Enyi (2012). According to Model 4, there is a negative relationship exists between the CCC and ROA. This finding is consistent with the results of Azam and Haider (2011), Nimalathan (2010), Egbide and Enyi (2012), Mansoori and Muhammad (2012). However, this result is not significant. The explanatory variables explain of 19.2%, 18.4%, 19.0%, 18.4% and 19.6 % of the variations in the profitability (ROA) respectively.

The control variable firm size with a probability value of 0.000 for ARP, ICP, APP and CCC respectively are statistically positive and significant related to return on asset. This means that, increasing the amount of firm size will result in an increase in the return on asset. This result is similar to find of Tufail et al. (2013). On the other hand, the control variable firm leverage with a probability of 0.000 for ARP, ICP, APP and CCC respectively are statistically negative and significant related to return on asset. Thus, the lower the firms leverage, the higher the profitability. So, the hypotheses of H1, H2, H3, H4, and H5 are accepted, while H6 is rejected for ROA.

In the first regression model, the ARP has been regressed against ROE. In the second regression model, ICP has been regressed against the ROE. The third regression model involves a regression of the APP against the ROE. In the fourth regression model, the CCC is regressed against the ROE. Finally, the three working capital measures (ARP, ICP and APP) have been regressed together against the ROE.

Table 5. Regression Model Results (Dependent variable: Return on Equity)

Variable	Model 1		Model 2		Model 3		Model 4		Model 5	
	Coef.	Sig.	Coef.	Sig.	Coef.	Sig.	Coef.	Sig.	Coef.	Sig.
Intercept	-3,133	,000	-1,431	,026	-1,299	,024	-2,198	,000	-3,109	,000
ARP	,865	,000							,897	,000
ICP			,126	,337					,052	,691
APP					,119	,361			-,130	,336
CCC							,342	,000		
FS	,198	,001	,153	,016	,142	,021	,062	,003	,201	,001
FL	-,317	,000	-,330	,000	-,352	,000	-,265	,000	-,294	,000
R-Squared	,058		,026		,026		,038		,059	
F-value	24,578	,000	10,777	,000	10,748	,000	15,842	,000	14,933	,000
Durbin Watson	1,984		2,007		2,007		2,000		1,985	

Notes: Significant level at 5%; Model 1 represents regression result for ARP; 2 represents regression result for ICP; 3 represents regression result for APP, 4 represents for CCC and 5 represents ARP, ICP, APP.

From Table 5, F- Statistics shows that all models are significant. The values of DW test show that there is no problem of auto-correlation. From Table 5, there are significant and positive relationship between ARP, CCC and ROE, while there are insignificant and positive relationship between ICP, APP and ROE. On the other hand, From Table 5, there is a positive and significant relationship between FS and ROE, while there is a negative and significant relationship between FL and ROE. Thus, the hypotheses of H1, H2, H3, H4 and H6 are

rejected, while H5 is accepted. The explanatory variables explain of 5.8%; 2, 6%; 2, 6%; 3, 8% and 5, 8 % of the variations in the profitability (ROE) respectively.

In the first regression model, the ARP has been regressed against OPM. In the second regression model, ICP has been regressed against the OPM. The third regression model involves a regression of the APP against the OPM. In the fourth regression model, the CCC is regressed against the OPM. Finally, the three working capital measures (ARP, ICP and APP) have been regressed together against the OPM.

Table 6. Regression Model Results (Dependent variable: Operating Profit Margin)

Variable	Model 1		Model 2		Model 3		Model 4		Model 5	
	Coef.	Sig.	Coef.	Sig.	Coef.	Sig.	Coef.	Sig.	Coef.	Sig.
Intercept	-,080	,204	-,206	,002	-,109	,066	-,174	,004	-,110	,135
ARP	-,034	,015							-,030	,041
ICP			,015	,271					,022	,101
APP					-,028	,042			-,023	,293
CCC							,004	,691		
FS	,027	,000	,031	,000	,028	,000	,030	,000	,029	,000
FL	-,051	,000	-,049	,000	-,046	,000	-,049	,000	-,046	,000
R-Squared	,066		,063		,065		,062		,070	
F-value	28,320	,000	26,652	,000	27,693	,000	26,277	,000	17,951	,000
Durbin Watson	1,913		1,910		1,907		1,907		1,916	

Notes: Significant level at 5%; Model 1 represents regression result for ARP; 2 represents regression result for ICP; 3 represents regression result for APP, 4 represents for CCC and 5 represents ARP, ICP, APP.

From Table 6, F- Statistics shows that all models are significant. The values of DW test show that there is no problem of auto-correlation. From Model 1, there is a negative and significant relationship exists between the ARP and OPM. From Model 2, there is a positive and insignificant relationship exists between the ICP and OPM. This finding is not consistent with the results of Azam and Haider (2011). From Model 3, there is a negative and insignificant relationship exists between the APP and OPM. According to Model 4, there is a positive and insignificant relationship exists between the CCC and OPM. This finding is not consistent with the results of Vural et al. (2012). The explanatory variables explain of 6.6%, 6.3%, 6.5%, % 6.2and 7.0 % of the variations in the profitability (OPM) respectively.

The control variable firm size with a probability value of 0.000 for ARP, ICP, APP and CCC respectively are statistically positive and significant related to operating profit margin. On the other hand, the control variable firm leverage with a probability of 0.000 for ARP, ICP, APP and CCC respectively are statistically negative and significant related to operating profit margin. So, the hypotheses of H1, H3 and H5 are accepted, while H2, H4 and H6 are rejected for OPM.

In the first regression model, the ARP has been regressed against NPM. In the second regression model, ICP has been regressed against the NPM. The third regression model involves a regression of the APP against the NPM. In the fourth regression model, the CCC is regressed against the NPM. Finally, the three working capital measures (ARP, ICP and APP) have been regressed together against the NPM.

Table 7. Regression Model Results (Dependent variable: Net Profit Margin)

Variable	Model 1		Model 2		Model 3		Model 4		Model 5	
	Coef.	Sig.	Coef.	Sig.	Coef.	Sig.	Coef.	Sig.	Coef.	Sig.
Intercept	-,101	,188	-,286	,000	-,167	,021	-,254	,001	-,098	,271
ARP	-,072	,000							-,062	,001
ICP			,004	,789					,018	,273
APP					-,055	,001			-,041	,017
CCC							-,006	,588		
FS	,39	,000	,044	,000	,041	,000	,043	,000	,40	,000
FL	-,133	,000	-,131	,000	-,123	,000	-,132	,000	-,126	,000
R-Squared	,202		,190		,197		,190		,206	
F-value	100,632	,000	93,461	,000	97,986	,000	93,553	,000	61,853	,000
Durbin Watson	1,847		1,835		1,845		1,834		1,855	

Notes: Significant level at 5%; Model 1 represents regression result for ARP; 2 represents regression result for ICP; 3 represents regression result for APP, 4 represents for CCC and 5 represents ARP, ICP, APP.

From Table 7, F- Statistics shows that all models are significant. The values of DW test show that there is no problem of auto-correlation. From Model 1, there is a negative and significant relationship exists between the ARP and NPM. This finding is consistent of Gill et al. (2010). From Model 2, there is a positive and insignificant relationship exists between the ICP and NPM. This finding is not consistent with the results of Azam and Haider (2011). From Model 3, there is a negative and significant relationship exists between the APP and NPM. According to Model 4, there is a negative and insignificant relationship exists between the CCC and NPM. The explanatory variables explain of 20.2%, 19.0%, 19.7%,19.0% and 20.6 % of the variations in the profitability (NPM) respectively.

The control variable firm size with a probability value of 0.000 for ARP, ICP, APP and CCC are statistically positive and significant related to net profit margin. On the other hand, the control variable firm leverage with a probability of 0.000 for ARP, ICP, APP and CCC respectively are statistically negative and significant related to net profit margin. Thus, the hypotheses of H1, H3, H4, and H5 are accepted, while H2 and H6 are rejected for NPM.

5. Conclusion

This study analyzed the relationship between the working capital management and profitability of the enterprises listed in ISE. The findings of this paper show a significant and negative relationship between account receivable period and return on asset, return on equity, operating profit margin and net profit margin in the manufacturing industry. We found that there are significant and positive relationship between accountant receivable period, cash conversion cycle and return on asset, while there are insignificant and positive relationship between inventory conversion period, accountant payable period and return on equity. On the other hand, we found that there are significant and negative relationship between accountant receivable period, accountant payable period and operating profit margin, while there are insignificant and positive relationship between inventory conversion period, cash conversion cycle and operating profit margin.

According to the study results there are negative relationship between accountant receivable period, accountant payable period, cash conversion cycle and net profit margin, while there is a positive relationship between inventory conversion period and net profit margin. This paper therefore suggests that managers can create value for shareholders by reducing accountant receivable period, accountant payable period, cash conversion cycle. On the other hand, our findings show that there is a significant and positive relationship between firm size and profitability, while there is a significant and negative relationship between firm leverage and profitability. Our findings also show that there are negative relationship between accountant receivable period, accountant payable period, cash conversion cycle and net profit margin at ISE firms similarly conducted by Deloof (2003), while there is a positive relationship between inventory conversion period and net profit margin.

This is the first paper to provide a fresh perspective on how working capital management of firms directly influences operating performance outcomes of corporate managers' decisions in Turkish manufacturing firms listed on ISE. This study is limited to the sample of Turkish manufacturing industry firms. Future research should investigate changes in interest rate and share on ISE in determining corporate profitability under working capital management.

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