THE EFFECT OF THE CASH CONVERSION CYCLE ON PROFITABILITY IN TEHRAN STOCK EXCHANGE

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Abstract- The purpose of this study is investigating the effect of the cash conversion cycle components on the operational gross profit to assets ratio. To this purpose 112 firms' financial data is gathered from Tehran stock exchange for the period of 1998- 2009.the cash conversion cycle components and 12 control variables entered to the five regression model. The result of first model test demonstrate that when all of the cash conversion cycle components entered to the model, the net cash conversion cycle and the number of days inventory holding did not have significant effect but number of days receivable accounts and number of days payable accounts had significant negative effect on operational gross profit to assets ratio.
The result of 2- 5 models test demonstrates that each components of the cash conversion cycle alone had significant negative effect on operational gross profit to assets ratio.
Keywords- cash conversion cycle, number of days inventory holding, number of days receivable accounts, number of days payable accounts, gross operational profit
JEL Classification- G30, G32

Introduction

Working capital management is effected in 2 factors. First, internal factors which includes investments' costs, short- term financing requirements, value of credit sales in result of receivable accounts, amount of inventory holding, materials and cash programming. Second external factors which includes investment opportunities in market, existence of financing opportunities from money and stock market and measurer institutions for customers' credit risk determining, regulation terms and offering methods of banking service [9].the purpose of this paper is to indicate the most internal factors that are effective in working capital on profitability. Liquidity is the main factor on profitability in any company. one of the influential factor in working capital management is shortening the cash conversion cycle (CCC). It can help the protection of liquidity power of firms thus, the purpose of this paper is investigating the effect of cash conversion cycle's components on the firms operational gross profit to assets ratio.

The paper is structured as follows, first we provide theoretical basics then assumptions and methodology and we prepare regression test of every five model. finally the last section discusses the findings of the this paper with suggestions.

Review on Theoretical Basics and Earlier Researches

In financial and accounting topics cash conversion cycle (CCC) is equal with the average number of days inventory holding and number of days receivable accounts, if we subtract number of days payable accounts from those, the net CCC per day being achieved. the lower this number means the process of purchasing, producing, storage and selling goods until the cash collection is going to be shorter or the period of payable accounts is going to be higher. so working capital of firms will be increase as well as the cash flow. thus, reducing this circulation and increasing liquidity power is suitable for working capital management [11]. In another word, CCC represent the number of days which during those days cash money

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will pay for goods and material and then through credits transfer to receivable accounts and again converse to cash [20]. having inventory is for replacing fluctuation of goods delivery and preventing from running out of it untimely. lower in goods circulation means higher investment in inventories. Storage more than needed cause's financial blockage in non- productive materials. The firm's purpose is to keep the inventories level in suitable amount [22].the period of receivable accounts shows the firm's ability in receiving funds result of credit sales. This period influenced by firm's credit policy. If they give more time to their customers for paying debt, then the number of days for receivable accounts will be increased. One of the other components of working management is payable accounts. This method is count as a cheap way for financing. number of days for payable accounts uses for two reason, first for cash budgeting and second one for comparing it with the time given by sellers of raw material and goods supplier for their receivable accounts collection [21].

CCC is one of the criterions for working capital evaluation. it is the time needed between materials purchasing, production process and funds collection due to selling. The longer of this time, the bigger investment in working capital should CCC time be longer. It might raise firm's profitability through more selling. nevertheless if investment cost in working capital be more than the benefits of investor's investment or business credit rewarding, afterwards the firm's profitability might be reduced[7].In net CCC criterion, we consider the length and the time we receive the receivable accounts and payable accounts period, and also the length of storage and the amount of those are not be noted. If two firms have the same CCC but receivable accounts for one be 90% and the other one be 50% sum of receivable accounts and inventories then the one with higher rate has a better liquidity condition, whereas this subject isn't considered in CCC [11].

Result in Shin and Soenen [23] researches showed that there is a reverse relationship between CCC and corporates' profitability. Wang [26] analyzed the data of Japanese and Taiwaneze firms for the period of the 1985- 1996. He found that shorter CCC is related with better corporate's performance. Anand and Gupta [3] used CCC and working capital turnover as criterion for evaluating performance of working capital management. Their result showed, these criterions are useful for evaluating as well as helping in analyzing the risk and return of the firms. Research in CCC done by Deloof [7] which took CCC, number of day's receivable accounts and payable accounts and inventory holding period as working capital management's criterions and gross operating income as profitability criterion. The result showed that there is a significant negative relationship between CCC and its components with gross operating income. Elgelly's [8] research showed that CCC has an important criterion in firm's profitability compare to current ratio. His research showed that there is a reverse and significant relation between profitability and liquidity. Laplant's research [12] indicated that firm's size and future sale's growth have influenced on efficiency of working capital management. His research also concluded that over investment in working capital can reduce firm's value. Result of Padachi's research [18] showed that over investment in inventory and receivable accounts is associated with lower profitability. Lazaridis and Tryfonidis [13] research in Greece showed that there is statistical negative significance relation between CCC and firm's profitability. They understood that managers can create higher

profits for their companies by holding CCC and its component such as receivable accounts, payable accounts and inventory holding period in appropriate level. Reheman and Nasr [19] did a research in Pakistan in which they confirm the negative relationship between CCC and its components with profitability. They also concluded that there is a reverse and significant relation between firm's liquidity and debt with profitability. But they confirmed on having a positive and significant relation between firm's size and profitability. Garcia Truel and Solano [10] have also confirmed the reverse and significant relationship between profitability with the period of receivable accounts, payable accounts and inventories holding period. thus, companies can reduce their CCC in order to increase their profitability. Singh and Pandie's research [24] showed the negative effect between profitability and working capital in idian's industrial companies. Dash and Ravipati [6] presented a model on resource allocation between working capital,current and fixed assets based on the size of working capital and rate of return on assets to achive an appropriate level of liquidity and profitability. Nobanee and Al hajjar [17] showed that managers can increase the firm's profitability by length of CCC and reducing the period of receivable accounts collection and storage. Although, they can increase their firm's profitability by paying the debt in a longer period of time but in long runs is going to be ruin the firm's credit reputation and its profitability. Another research done by Nobanee [15] showed that by shortening CCC, it can damage firm's operation and reduce its profit. Chaterjee [5] resulted negative relationship between CCC's components with profitability and positive relationship between firm's size and profitability in British companies. Nobanee et al [16] results shows there's a strong negative relation between profitability and CCC, except in serving companies. Akgun and Meltem's research [2] showed that one of the effective ways for shortening CCC is to shorten the period of receivable accounts, delaying the payment of payable accounts and inventories. Caballero et al [4] studied the effective factors on CCC in small and medium firms. These firms tried to shorten this period and this cycle is longer for older firms. Rezazade and Heidarian [20] researches in Iran showed that by shortening CCC. it would improve the profitability. in addition by reducing the days of storage and collecting receivable accounts, we can create values for firms. Torghe's [25] research confirmed that there is a reverse relation between profitability with CCC, duration of receivables accounts and inventories. but there is a positive relationship between profitability and duration of payable accounts.

Hypothesis
- Each component of CCC (business operations period) with 12 other factors are effective on profitability.
- The net CCC with 12 other factors is effective on profitability.
- Number of days inventory with12 other factors are effective on profitability.
- Number of days receivable accounts with12 other factors are effective on profitability.
- Number of days payable accounts with12 other factors are effective on profitability.

Research Methodology
The statistics' population for this research are reported from all manufacturing and nonfinancial companies which are listed in Teh-

ran stock exchange for the period of 1998- 2009.112 companies out of 411 manufacturing firms are selected to study on them in this method:

I. Have access to their information on this period.
II. Stock transaction of the companies hasn't been interrupted.
III. Their financial year is ended on March 20.
IV. Not belong to investment and financial itermediation group.

These data are collected from stock exchange organization web-site, annual financial statements of companies which have published by Tehran stock exchange such as Dena, Rah AvardeNovin, Tadbir Pardaz, we used SPSS and EVIEWS softwares. in this research, gross operation profit (GP) is used as dependent variable and is obtained from gross profit margin to total assets.net CCC is equal to the number of days receivable accounts (R/A) plus number of days inventory (INV) minus number of days payable accounts (P/A).Duration of inventories (INV) means the average time in which you store the goods until selling stage. Duration of R/A means the time in which you collect receivable accounts. Duration of P/A means the time you pay the payables accounts which mean the trade debts is being paid [1].

The 12 other factors are:

I. Fixed financial assets ratio (Fixed FA): these assets represent investments in any type of long- term banking accounts, participation notes, long- term investment in company's shares, and long- terms receivable accounts. This ratio is calculated from fixed financial assets divided to total assets.
II. Financial debt ratio (Fin Debt): it's obtained dividing short and long term loans to total assets.
III. Firm's size (Ln Sales): it's calculated by logarithm of net sales revenue.
IV. Sales Growth: it's calculated from differences of current and previous year sales divided to previous year sales.
V. Since 112 sample companies were included in 8 industries. so for the measurement of industry influences is used eight dummy variables such as manufacturing machinery, metal products, pharmaceutical products, Automobiles companies, food companies except ones with sugar added, petrochemical and chemical companies, cement and basic metals.

Our research is used correlation and run with 5 regression models. In all these models, we considered the effect of 12 independent variables separately. This means the effect of 12 independent variables in 5 regression models has been controlled. In each model, we tested the effect on gross operation profit by entering each of components of net CCC.

Correlation Test

Understanding of intensity and relationship between variables models, correlation matrix is used before doing the regression model.
H0: There isn't any correlation between model's variables.
H1: There is correlation between model's variables.
According to table 1, most of variables have significant correlation with each other. However in some of those the relationship isn't significant. Bracket's amount shows the significant level of coefficients. [See Table 1]

Existence of Linear Relationship Test Between Dependent and Independent Variables

This test is done by analyzing of variance and regression model

[14].
H0: There isn't any linear relationship between variables.
H1: There is any linear relationship between variables.
By considering to the significant level in table 2 is less than 5%,we can assume that there is a linear relationship.

Table 2- Analyze of Variance

Model	Sum of Squares	Df	Mean Square	F	Sig
Regression	79095/322	12	7909/532	75/231	0/000
Residual	111971/142	1332	105/137		
Total	191066/465	1344			

Normality Test of Errors

One of regression's assumptions takes the residual error with normal distribution as mean equal to zero. Graph 1 show that the mean of residual errors is zero and the standard deviation nearly the same.so it will confirm the above assumption.
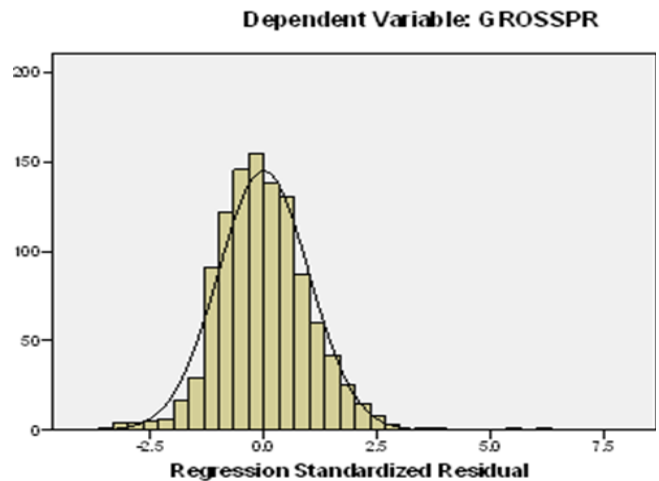
Graph 1- Regression Standardized Residual

Normality Test of Data

Kolmogorov- smirnov test is used to indicate the normality of data.
H0: data distribution is normal.
H1: data distribution isn't normal.
According on table 3, significant level is more than 5%, so with95% confidence we can say data has been normally distributed.

Table 3- One Sample K-S Test

Normal Parameters (a,b)	N (number of sample)	Standardized Residual
		1344
	Mean	/00000000
	Std. Deviation	0.996419
Most Extreme Differences	Absolute	0.035
	Positive	0.035
	Negative	- 0.033
Kolmogorov- Smirnov Z		1.186
Asymp. Sig. (2- tailed)		0.12

Randomic Test of Residuals

Another assumption in linear regression is independence of residuals from the others.for this purpose,we used Durbin- Watson test.

H0:1.5<D.W<2.5
H1:D.W<1.5 or D.W>2.5
According to table 4, D.W is equal to1/921, so there isn't any auto correlation in residuals.

Table 4– Model Summary

D.W	Std.Errors of Estimate	Adjusted R Square	R2	R
1/921	10/25364	0/408	0/414	0/643

Multi Collinearity Test
Collinearity is a situation which shows if any of independent variables are linear functions of other independent variables or not. For doing this we've used VIF and Tolerance tests and also condition index. Table 5 shows the results of multi collinearity test with VIF and Tolerance statistic. since VIF statistic is less than 5 and about 1,so there isn't any multi collinearity between independent variables or can be tolerable. in addition Tolerance statistic are so close to 1,so there isn't multi collinearity again.

Table 6 shows condition index and variance ratios for the multi collinearity test. whereas condition index less than 15 then the assumption of lack of collinearity between independent variables are confirmed [*See Table 6*] [14].

The First Hypothesis Test
In the first model, components of CCC with other 12 independent variables entered into regression model. these variables are: net CCC, number of days inventory, number of days receivable accounts, number of days payable accounts, Fixed Fa ratio, Fin Debt ratio, sales growth rate, logarithm of sales with 8 other dummy variables which are the indicator of 8 industry. Results of coefficient's effect test of those variables are shown in table 7.

Table 7– Regression Coefficients Test in the First Model

Variables	Unstandardizied Coefficients		Standardizied Coefficients	t	sig
	B	Std. Error	Beta		
(Constant)	27/735	/0967		28/675	/0000
Fin Debt	- 0.03084	1/166	- /0418	- 0.01937	/0000
P/A	- /0019	/0004	- /0137	- 0.02326	/0000
R/A	- /0037	/0006	- /0187	- 0.00791	/0000
D3	11/838	1/067	/0314	11/093	/0000
D6	10/448	/0981	/0291	10/646	/0000
D7	13/281	1/407	/0283	9/439	/0000
D5	7/659	1/060	/0190	7/224	/0000
Sales growth	3/589	/0800	/0109	4/488	/0000
Fixed FA	- 0.02899	3/739	- /0076	- 0.00261	/0006
D4	2/973	/0949	/0087	3/133	/0002
Ccc	/0023			/0746	/0456
Inv	/0020			/0700	/0484
Ln sales	- /0006			- /0232	/0817
D1	- /0023			- /0802	/0423
D2	- /0005			- /0185	/0854
D8	/0028			1/037	/0300

The first model of regression's equation is as below:
Gross operating profit = 27/735- 10/345 fixed FA- 19/616 Fin Debt-0/019 P/A- 0/037 R/A +3/589 sales growth +11/838D3+ 2/973D4+7/659D5+10/448D6 +13/281D7

Coefficients of first model shows that Fixed Fa ratio, Fin Debt ratio, Number of days account payable and Number of days receivable accounts have a negative influence on gross operating profit.
The net CCC's coefficient, Number of day's inventory, Ln sales and D1, D2, D8 as dummy variable weren't significant. Coefficients of dummy variables D3, D4, D5, D6, D7 and sales growth have positive influence on gross operating profit. since 10 out of 16 independent variables have significant effect on GP. Thus, other variables are removed from model and examinations of linear regression is done base on effectiveness of variables on GP.

The Second Hypothesis Test
In the second model, just net CCC with 12 other variables are entered in order to examine their influences on GP (Gross operating Profit). table 8 shows coefficients and significant level of each variables.

Table 8– Regression Coefficients Test in the Second Model

Variables	Unstandardizied Coefficients		Standardizied Coefficients	t	sig
	B	Std. Error	Beta		
(constant)	23/284	/0903		25/790	/0000
Fin Debt	- 0.02036	1/162	- /0380	- 0.04335	/0000
D7	14/447	1/392	/0303	10/379	/0000
D6	9/568	/0950	/0263	10/068	/0000
D3	9/841	/0991	/0257	9/932	/0000
Sales growth	5/114	/0837	/0155	6/113	/0000
D5	6/489	1/076	/0159	6/030	/0000
CCC	- /0007	/0003	- /0071	- 0.00302	/0008
Fixed FA	- 0.0092	3/946	- /0056	- 0.00103	/0049
Ln sales	/0016			/631	/0528
D1	- /0025			- /944	/0345
D2	- /0038			- 0.00213	/0142
D4	/0046			1/630	/0103
D8	/0011			/0399	/0690

Gross Operating Profit = 23/284-7/761 Fixed Fa- 17/835Fin Debt-0/007CCC +5/114Sales Growth +9/841D3+ 6/489D5+ 9/568D6 +14/447D7

Results showed that coefficients of Ln sales and dummy variables (D1, D2, D4, D8) weren't significant. Coefficients of Fixed FA ratio, net CCC, Fin Debt ratio are negative and significant. On the other hand, (D3, D5, D6, D7) as coefficients of dummy variables and sales growth are positive and significant.

The Third Hypothesis Test
In the third model, between components of CCC just the number of days inventory with 12 other variables entered to the regression in order to examine the influences of these variables on GP. table 9 shows coefficients of each variables.
According to table 9, coefficients of Ln sales and D1, D2, D4, D8 are not significant. Coefficients of Fixed FA ratio, number of day's inventory and Fin Debt ratio are negative an d significant. On the other hand, coefficients of dummy variables (D3, D5, D6, and D7) and sales growth are positive and significant. Thus, number of day's inventory as a component of CCC has negative significant

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impact on GP.

The Fourth Hypothesis Test
In this model, between components of CCC, just numbers of day's receivable accounts with 12 variables are entered to the regression to examine the effect of these variables on GP.

Table 9– Regression Coefficients Test in the Third Model

Variables	Unstandardizied Coefficients		Standardizied Coefficients	t	sig
	B	Std. Error	Beta		
(constant)	24/160	1/086		22/257	/0000
Fin Debt	- 0.03586	1/171	- /0397	- 0.01889	/0000
D7	14/711	1/389	/0309	10/593	/0000
D6	9/457	/0975	/0260	9/701	/0000
D3	9/110	/0984	/0240	9/257	/0.000
D5	6/139	1/094	/0151	5/613	/0000
Sales growth	5/148	/0.821	/0156	6/268	/0000
Inv	- /0009	/0003	- /0076	- 0.00243	/0005
Fixed FA	- 4.5	3/889	- /0066	- 0.00637	/0021
Ln sales	/0015		/0595		/0552
D1	- /0025		- /0918		/0359
D2	- /0045		- 0.00131		/0.078
D4	/0051		1/789		/0074
D8	/0012		/0455		/0649

Gross operating profit = 24/160- 9/002 Fixed FA- 18/502 Fin Debt-0/009 INV +5/148 Sales Growth+9/110 D3+6/139 D5+9/457 D6+14/711 D7

Table 10– Regression Coefficients test in the Fourth Model

Variables	Unstandardizied Coefficients		Standardizied Coefficients	t	sig
	B	Std. Error	Beta		
(constant)	26/062	/0918		28/375	/0000
Fin Debt	- 0.08738	1/122	- /0389	- 0.06867	/0000
R/A	- /0048	/0005	- /0239	- 0.07895	/0000
D3	12/852	1/064	/0337	12/076	/0000
D6	10/773	/0984	/0297	10/947	/0000
D7	13/172	1/421	/0278	9/270	/0000
D5	8/069	1/073	/0198	7/521	/0000
Sales growth	3/756	/0805	/0114	4/667	/0000
D4	2/543	/0953	/0074	2/668	/0008
fixed FA	- 0.02179	3/792	- /0068	- 0.00415	/0013
Ln sales	- /0004		- /0172		/0863
D1	- /0025		- /0847		/0397
D2	/0006		/0212		/0832
D8	/0020		/0719		/0472

Gross operating profit = 26/062- 9/413 Fixed FA- 18/206 Fin Debt-0/048 R/A+3/756 Sales Growth+12/852 D3+2/543 D4+8/069 D5+10/773 D6+13/172 D7

According to table 10, coefficients of dummy variables (D1, D2, D8) and ln sales are not statistically significant. Fixed FA ratio, number of day's receivable accounts and Fin Debt ratio are negative and significant effects. Other dummy coefficients of independ-

ent variables such as (D3, D4, D5, D6, D7) and sales growth represent positive and significant effect on GP ratio.

The Fifth Hypothesis Test
In the fifth model, we used the same variables except the one of accounts receivables which we replace with payable accounts to observe the effects of these variables on gross operating profit. Table 11 shows the each variable's coefficients.
According to the table 11, coefficients of dummy variables D1, D2, D8 and Ln sales are not significant. coefficients of Fin Debt ratio, number of days payable accounts and Fixed FA ratio have negative and significant impact. Coefficients of D3, D4, D5, D6, D7 and sales growth have positive effects.

Table 11– Regression Coefficients Test in the Fifth Model

Variables	Unstandardizied Coefficients		Standardizied Coefficients	t	sig
	B	Std. Error	Beta		
(constant)	24/809	/0905		27/418	/0000
Fin Debt	- 0.02095	1/165	- /0426	- 0.1828	/0000
P/A	- /0026	/0003	- /0189	- 0.01308	/0000
D7	14/650	1/428	/0307	10/260	/0000
D6	9/541	1/007	/0262	9/475	/0000
D3	9/392	1/041	/0246	9/018	/0000
Sale growth	5/300	/0796	/0160	6/661	/0000
D5	7/191	1/092	/0176	6/586	/0000
Fixed FA	- 0.06081	3/824	- /0066	- 0.0051	/0017
D4	2/075	/0964	/0060	2/153	/0032
Ln sales	/0016		/0643		/0520
D1	- /0011		- /0370		/0712
D2	- /0035		- 0.00298		/0182
D8	/0046		1/660		/0097

Gross operating profit = 24/809- 9/148 Fixed FA- 19/907 Fin Debt-/0026 P/A +5/300 Sales Growth+9/392 D3+2/075 D4+7/191 D5+9/541 D6+14/650 D7

Discussion and Conclusions
In this research the effect of each components of working capital with 12 control variables on firm's GP in five models were studied. these components consists of: CCC, number of days inventory, number of days receivable accounts and number of days payable accounts. in the first model when these four components with 12 other control variables have entered to regression, results showed that net CCC and number of days inventory, don't have significant impact on GP ratio. but number of days receivables accounts and number of days payable accounts have negative significant impact on GP. This means that if the number of day's payable accounts and receivable accounts increase, the gross operating income will decrease.
In the second model we investigated the effect of net CCC with 12 other control variables on GP. Result showed that net CCC has negative and significant impact on GP. this means, as the net CCC increase, GP ratio will decrease. In third model, we only replaced number of day's inventory instead of net CCC. results showed that number of days inventory has negative and significant effect on GP. This means that by increasing the number of day's inventory, GP ratio will decrease.
In the fourth model we only replaced number of day's inventory

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with number of day's accounts receivables. result suggested that this period has negative significant effect on GP and showed managers can improve profitability by reducing the credit period granted to their customers the only differences in fifth model is the substitution of accounts receivables with accounts payables. we observed that number of days accounts payables has negative influence on GP ratio. the result of this research are consistent with findings of Deloof [7] in Belgium, Lazaridis and Tryfonidis [13] in Greece, Reheman and Nasr [19] in Pakistan, Garcia and Solano [10] in spain,Singh and pandey [24] in India, Nobanee and Al hajjar [17] in Japan, Chatterjee [5] in England, Rezazade and Heidarian [20],Torghe [25] in Iran.but it's not accorded with Torghe's findings [25] about positive relationship between the number of days accounts payable and profitability.

Suggestions

In financial analyzing, investment and stock evaluation, it should be considered not only GP, but also companie's working capital and CCC.

Companies should have constantly compare their business operation period such as: Number of days inventory, number of days payable accounts, number of day receivables s accounts with their industry competitors and find out strategies for reducing and adjusting them.

For more transparency in the financial reporting system, companies should be required to report their working capital status to stock exchange organization.

Reducing the cash conversion period, companies can improve their profitability.

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Table 1- Correlation Matrix

Pearson Correlation	G P	Fixed Fa	Fin Debt	CCC	R/A	INV	P/A	Ln Sales	Sales Growth
G P	1	0/080	- 0/430	- 0/170	0/233	0/123	- 0/164	0/011	0/210
		(0/008)	(0/000)	(0/000)	(0/000)	(0/000)	(0/000)	(0/718)	(0/000)
Fixed Fa	0/080	1	- 0/013	- 0/159	- 0/186	- 0/115	- 0/087	0/111	0/026
	(0/008)		(0/677)	(0/000)	(0/000)	(0/000)	(0/004)	(0/000)	(0/383)
Fin Debt	- 0/430	- 0/013	1	0/099	0/008	- 0/151	- 0/226	0/051	- 0/122
	(0/000)	(0/677)		(0/001)	(0/783)	(0/000)	(0/000)	(0/000)	(0/000)
CCC	- 0/170	- 0/159	0/099	1	0/413	0/619	- 0/176	- 0/117	- 0/228
	(0/000)	(0/000)	(0/001)		(0/000)	(0/000)	(0/000)	(0/000)	(0/000)
R/A	0/233	- 0/186	0/008	0/413	1	0/174	0/295	- 0/108	- 0/185
	(0/000)	(0/000)	(0/783)	(0/000)		(0/000)	(0/000)	(0/000)	(0/000)
INV	0/123	- 0/115	- 0/151	0/619	0/174	1	0/446	- 0/092	- 0/127
	(0/000)	(0/000)	(0/000)	(0/000)	(0/000)		(0/000)	(0/002)	(0/000)
P/A	- 0/164	- 0/087	- 0/226	- 0/176	0/295	0/446	1	- 0/028	- 0/016
	(0/000)	(0/004)	(0/000)	(0/000)	(0/000)	(0/000)		(0/345)	(0/582)
Ln Sales	0/011	0/111	0/051	- 0/117	- 0/108	- 0/092	- 0/028	1	0/031
	(0/718)	(0/000)	(0/000)	(0/000)	(0/000)	(0/002)	(0/345)		(0/308)
Sales Growth	0/210	0/026	- 0/122	- 0/228	- 0/185	- 0/127	- 0/016	0/031	1
	(0/000)	(0/383)	(0/000)	(0/000)	(0/000)	(0/000)	(0/582)	(0/308)	

Table 5- Collinearity Test

Variables	Unstandardizied Coefficients		Standardizied Coefficients	T	Sig	Collinearity Statistics	
	B	Std.Error	Beta			Tolerance	VIF
(Constant)	27/735	0/967		28/675	0/000		
Fin Debt	- 0.03084	1/166	0	- 0.01937	0/000	0/893	1/120
P/A	0	0/004	0	- 0.02326	0/000	0/794	1/259
D7	13/281	1/407	0/283	9/439	0/000	0/613	1/631
D6	10/448	0/981	0/291	10/646	0/000	0/738	1/355
D3	11/838	1/067	0/314	11/093	0/000	0/685	1/460
R/A	0	0/006	0	- 0.00791	0/000	0/717	1/394
D5	7/659	1/060	0/190	7/224	0/000	0/792	1/262
Sales Growth	3/589	0/800	0/109	4/488	0/000	0/933	1/072
D4	2/973	0/949	0/087	3/133	0/000	0/720	1/390
Fixed Fa	- 0.02899	3/739	0	- 0.00261	0/000	0/73	1/370

Table 6- Collinearity Test

Model	Eigen Value	Condition Index	Constant	Fin Debt	P/A	R/A	D6	D3	D7	D5	Sale Grow	D4	Fixed Fa
								Variance Proportions					
1	4/290	1/000	0/01	0/01	0/01	0/01	0/00	0/01	0/00	0/00	0/01	0/01	0/01
2	1/343	1/788	0/00	0/00	0/01	0/01	0/01	0/01	0/23	0/01	0/00	0/01	12/0
3	1/043	2/029	0/00	0/01	0/01	0/00	0/01	0/11	0/00	0/09	0/02	0/31	00/0
4	1/015	2/056	0/00	0/00	0/00	0/00	0/02	0/28	0/00	0/31	0/00	0/00	00/0
5	1/003	2/068	0/00	0/00	0/00	0/00	0/44	0/02	0/00	0/14	0/00	0/02	00/0
6	0/748	2/395	0/00	0/01	0/02	0/02	0/00	0/01	0/00	0/01	0/77	0/02	00/0
7	0/565	2/757	0/00	0/38	0/25	0/01	0/00	0/00	0/02	0/02	0/00	0/04	00/0
8	0/431	3/154	0/00	0/11	0/05	0/00	0/08	0/04	0/20	0/08	0/03	0/10	54/0
9	0/303	3/760	0/00	0/10	0/20	0/01	0/11	0/15	0/39	0/16	0/02	0/31	30/0
10	0/178	4/907	0/00	0/09	0/24	0/78	0/11	0/31	0/00	0/06	0/05	0/08	02/0
11	0/081	7/300	0/99	0/28	0/12	0/17	0/21	0/07	0/14	0/13	0/09	0/11	01/0

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