

# **The Relationship between the Investment in Current Assets and Profitability & Liquidity**

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## **Abstract**

This study aims to examine the relationship between the investment in current assets and profitability and liquidity for industrial companies listed in Amman Stock Exchange, the researchers measured the investment in current assets through the ratio of current assets divided by total assets (C.A\T.A), profitability measured by return on assets ratio (ROA), and liquidity measured through the Current Ratio (C.R).

The researchers found that there is a relationship between investment in current assets & profitability, liquidity in companies listed in Amman stock exchange- industrial sector, and the researchers found that the ratio of (44.1%) of the changes that occur in the Return on Assets (ROA) and Current Ratio (C.R) belonging to the change in investment in current assets.

Therefore; researchers recommended industrial companies to follow a moderate policy of investment in current assets. So that the ratio of current assets to fixed assets shall be moderate, reflecting a reasonable degree of risk and acceptable profitability which balanced between risk and return.

**JEL classification numbers:** G33

**Keywords:** Return on Assets (ROA), Current Ratio (C.R), Investment in Current Assets (ICA), Industrial Sector, Amman Stock Exchange(ASE), Profitability, Liquidity.

## **1 Introduction**

A firm is required to maintain a balance between liquidity and profitability while conducting its day to day operations. Liquidity is a precondition to ensure that firms are able to meet its short term obligations and its continued flow can be guaranteed from a profitable venture. The importance of cash as an indicator of continuing financial health

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should not be surprising in view of its crucial role within the business. This requires that business must be run both efficiently and profitably. In the process, an asset-liability mismatch may occur which may increase firm's profitability in the short run but at a risk of its insolvency.

Working capital management (WCM) is of particular importance. With limited access to the long-term capital markets, these firms tend to rely more heavily on owner financing, trade credit and short-term bank loans to finance their needed investment in cash, accounts receivable and inventory (*Chittenden et al, 1998; Saccurato, 1994*). However, the failure rate among small businesses is very high compared to that of large businesses. Studies in the UK and the US have shown that weak financial management - particularly poor working capital management and inadequate long-term financing - is a primary cause of failure among small businesses (*Berryman, 1983; Dunn and Cheatham, 1993*). The success factors or impediments that contribute to success or failure are categorized as internal and external factors. The factors categorized as external include financing (such as the availability of attractive financing), economic conditions, competition, government regulations, technology and environmental factors. While the internal factors are managerial skills, workforce, accounting systems and financial management practices.

Some research studies have been undertaken on the working capital management practices of both large and small firms in India, UK, US and Belgium using either a survey based approach (*Burns and Walker, 1991; Peel and Wilson, 1996*) to identify the push factors for firms to adopt good working capital practices or econometric analysis to investigate the association between WCM and profitability (*Shin and Soenen, 1998; Anand, 2001; Deloof, 2003*).

A popular measure of working capital management is the cash conversion cycle, that is, the time span between the expenditure for the purchases of raw materials and the collection of sales of finished goods. For example, found that the longer the time lag, the larger the investment in working capital. A long cash conversion cycle might increase profitability because it leads to higher sales. However, corporate profitability might decrease with the cash conversion cycle, if the costs of higher investment in working capital rise faster than the benefits of holding more inventories and/or granting more trade credit to customers.

## 2 The Study Importance

Importance of the study is emphasized through the following elements:

- As the researchers mentioned above; that the Liquidity occupies great importance in the continuity of companies, and the ability to meet its liabilities, and the importance of cash as an indicator of continuing financial health should not be surprising in view of its crucial role within the business, the lack of attention to liquidity and cash may lead to the risk of financial insolvency.
- On the other hand, Profitability measures are important to company managers and owners alike. If a small business has outside investors who have put their own money into the company, the primary owner certainly has to show profitability to those equity investors.
- Attempting to examine the Relationship between Current Assets as a ratio from the total assets and the liquidity & profitability only for industrial companies listed in Amman Stock Exchange.

### 3 The Study Objective

Measuring Current Assets as a ratio from the total assets of industrial companies listed in Amman Stock Exchange during the period between 2008 to 2013.

Measuring Profitability Ratios for the industrial companies listed in Amman Stock Exchange; for the same period above.

Measuring Liquidity Ratios for the industrial companies listed in Amman Stock Exchange; for the same period above.

Trying to derive the relationship between the variables above and examine the relationships between Current Assets as a ratio from the total assets and the liquidity & profitability only for industrial companies listed in Amman Stock Exchange.

### 4 The Study Model

#### 4.1 Virtual Model

This study aims to discovery of the relationships between Current Assets as a ratio from the total assets and the liquidity & profitability in the Industrial sector in ASE, so the researcher put the following virtual model to clarification this relationship:

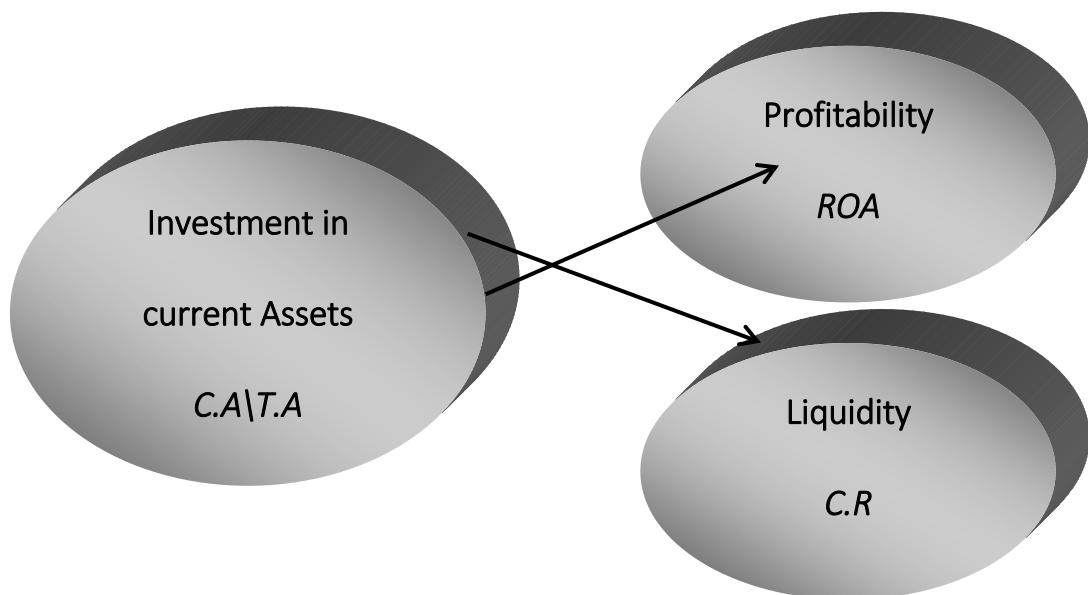


Figure 1: The virtual model of study

where:

- **C.A\T.A** : Current Assets \ Total Assets
- **ROA**: Return on Assets.
- **C.R**: Current Ratio

## 4.2 Mathematical Model of Study

Depend on virtual model that suggested by researchers, they put the following equation: (Equation: 1)

$$ICA = \alpha_0 + \beta_1 * ROA + \beta_2 * C.R + \epsilon_i \quad (1)$$

where;

**ICA** = Investment in Current Assets (*as a ratio from the total assets*)

**ROA** = Return on Assets

**C.R** = Current Ratio

## 5 Study Hypotheses

According to the Mathematical model above, the researchers derive the following Hypotheses:

### 5.1 The Main Null Hypothesis

**H<sub>0</sub>**: there are no significant relationships between the investments in current assets and profitability & liquidity in companies listed in Amman stock exchange- industrial sector.

### 5.2 The 1<sup>st</sup> sub Null Hypothesis

**H<sub>0-1</sub>**: there are no significant relationships between the investments in current assets and profitability in companies listed in Amman stock exchange- industrial sector.

### 5.3 The 2<sup>nd</sup> sub Null Hypothesis

**H<sub>0-2</sub>**: there are no significant relationships between the investments in current assets and liquidity in companies listed in Amman stock exchange- industrial sector.

## 6 The Study Variables

### 6.1 Independent variables

#### 6.1.1 Profitability

Profitability is the goal of all business ventures. Without it the business will not survive in the long run. Profitability is measured with income and expenses. Income is money generated from the activities and the investments in assets.

Increasing profitability is one of the most important tasks of the business managers. Managers look for ways to change the business to improve profitability. These potential changes can be analyzed with a pro forma income statement or a Partial Budget. Partial budgeting allows you to assess the impact on profitability of a small or incremental change in the business before it is implemented.

A variety of Profitability Ratios can be used to assess the financial health of a business.

These ratios, created from the financial statement. In this study Profitability will be measured by Return on Assets (ROA) and it will measure as:  
(Equation: 2)

$$\text{ROA} = \frac{\text{Net Income}}{\text{Total Assets}} \quad (2)$$

### 6.1.2 Liquidity

Liquidity is the amount of money that is quickly available for investment and spending. High liquidity is when money is easy to get. Low or tight liquidity is when money is difficult or expensive to get, and it means the ability of companies to cover short-term liabilities from current assets within one year. In other words, Cash is a company's lifeblood.

Several ratios which can measure the ability of companies to meet its current liabilities, in this study the researcher use the Current Ratio to examine the ability of companies to face of short-term liabilities, and the following equation show that: (Equation:3)

$$\text{C. R} = \frac{\text{Current Assets}}{\text{Current liabilities}} \quad (3)$$

## 6.2 Dependent Variable

### 6.2.1 Investment in current Assets

All assets that are reasonably expected to be converted into cash within one year in the normal course of business. Current assets include cash, accounts receivable, inventory, marketable securities, prepaid expenses and other liquid assets that can be readily converted to cash.

If companies invest in low-current assets, the risk increases because of low liquidity, that make profitability go up because of the use of cash in investment in fixed assets, the biggest return.

The Researchers will Measure the Investment in current Assets by the ratio of current assets divided by total assets as the following equation shows: (Equation:4)

$$\text{C. R} = \frac{\text{Current Assets}}{\text{Total Assets}} \quad (4)$$

## 7 Literature Review

### 7.1 Study of (*Senthilmani Thuvakaran, 2013*)

*Impact of Working Capital Management on Profitability in UK Manufacturing Industry*, London South Bank University, published Dissertation MSc. Accounting with Finance, social science research network: ISSN: id2345804.

Working capital management is given higher priorities by the corporate world. Companies which are effectively using their working capital components are likely to have competitive

advantage over their competitors. The purpose of this research is to investigate the relationship between the working capital components and corporate profitability in different industries. 60 manufacturing companies, 20 construction companies and 17 telecommunication companies listed on the London stock exchange is used for this research covering the period of 2006-2011. The dependent variable, profitability is measured using gross operating income. The independent variables are receivable days, Payable days, inventory days, cash conversion cycle, debt, and size of the firm, Pearson's correlation and regression analysis to explore the relationship between the profitability and the working capital components. The results show that there is no significant relationship between the working capital components and profitability. There is a negative relationship between gearing and profitability in manufacturing firms.

## **7.2 Study of (Aqsa Chaudhry, Muhammad Safdar Sial, 2012)**

***Relationship between Working Capital Management and Firm Profitability:*** Manufacturing Sector of Pakistan, social science research network: ISSN: id2345804.

The goal of the study above is to measure the relationship between working capital management and firm profitability in the manufacturing sector of Pakistan. We have selected the sample of 100 Pakistani manufacturing listed companies on Karachi Stock Exchange for the time period of 10 year from 1999-2008. The data used in this study was acquired from Karachi Stock Exchange (K.S.E) and from the Balance Sheet Analysis of Joint Stock Companies by State Bank of Pakistan. We have studied the effect of different variables of working capital management including the Average collection period, Inventory turnover in days, Average payment period and cash conversion cycle. Current ratio, Size and debt ratio used as control variables. Pearson Correlation and Regression Analysis (Ordinary Least Square and Fixed Effect Model) are used.

The results show that there is a strong negative relationship between variables of the working capital management and profitability of the firm. It means that as the cash conversion cycle increases it will lead to decreasing profitability of the firm, and managers can create a positive value for the shareholders by reducing the cash conversion cycle to a possible minimum level. We find that there is a significant negative relationship between liquidity and profitability. We also find that there is a positive relationship between size of the firm and its profitability. There is also a significant negative relationship between debt used by the firm and its profitability.

The sample size consisting of 100 manufacturing companies is relatively small as compared to 650 companies listed on the Karachi Stock Exchange as on August 2009 which slightly limits the generalize ability of the findings. To the best of the researcher's knowledge this study is a unique study of its kind in the Non-Financial Sector that studies the impact of working capital management on firm profitability of manufacturing sector.

## **7.3 Study of (Abuzar M.A. Eljelly, 2004): Liquidity - profitability tradeoff:**

***An empirical investigation in an emerging market,*** International Journal of Commerce and Management, ISSN: 1056-9219, Vol. 14: 2, pp.48 - 61.

This study empirically examines the relation between profitability and liquidity, as measured by current ratio and cash gap (cash conversion cycle) on a sample of joint stock companies in Saudi Arabia. Using correlation and regression analysis the study found significant negative relation between the firm's profitability and its liquidity level, as

measured by current ratio. This relationship is more evident in firms with high current ratios and longer cash conversion cycles. At the industry level, however, the study found that the cash conversion cycle or the cash gap is of more importance as a measure of liquidity than current ratio that affects profitability. The size variable is also found to have significant effect on profitability at the industry level. Finally, the results are stable over the period under study.

#### **7.4 Study of (Morris Lamberson , 1995)**

*Changes in Working Capital of Small Firms in Relation to Changes in Economic Activity*, University of Central Arkansas, American Journal of Business, Vol. 10: 2, pp.45 – 50

This paper studies how the working capital position of small firms responds to changes in the level of economic activity. Fifty small firms were studied for the time period 1980-1991. The findings from this study showed that liquidity increased slightly for these firms during economic expansion with no noticeable change in liquidity during economic slowdowns. Their investment in working capital, as measured by the inventory to total assets and current assets to total assets ratios, were relatively stable over the time period of this study. Findings suggest that working capital management practices of small firms in response to changes in economic activity do not follow commonly held expectations.

## **8 Data Collecting**

The researchers used two types of data tools:

### **8.1 Secondary Sources**

Companies Guide issued by Amman Stock Exchange (several versions) covering the period of the study. And Annual reports and financial statements for the companies included in the study sample.

### **8.2 Primary Sources**

Metrics and ratios which necessary to accomplish the purposes of the study, represented in the calculation each of: ROA, C.R, C.A\T.A.

## **9 Population & Sample of the Study**

A **random** sample among the companies composing the industrial sector has been selected for conducting this study after omitting all companies who don't meet the following criteria:

To be among the registered companies and traded in industrial sector.

Trading in the company stocks wasn't suspended according to a decision made by the board of directors of the market during the period from 2/1/2008 till 31/12/2013.

Trading in the company stocks wasn't interrupted, and its type of ownership wasn't transformed or merged during the period from 2/1/2008 till 31/12/2013.

Availability of sufficient data such as income statement, balance sheet in order to calculate financial indicators and ratios that were used in the study.

Availability of all monthly closing prices for the companies stocks during the whole period in which the study was conducted.

According to the above mentioned criteria, a **random** sample has been selected for this study comprising (50) industrial companies listed in the Amman Stock Exchange, they are all following the Gregorian calendar and their financial year ends up in the 31st of December of each year.

## 10 Data Analysis Methods

Adopting the statistical analysis method SPSS (Statistical Package for Social Sciences) Examining coefficient of determination ( $R^2$ ) in addition to the adjusted coefficient of determination (Adjusted  $R^2$ ). The coefficient of determination ( $R^2$ ) measures to which degree the dependent variable is affected by independent variables. If all the changes occurring in the dependent variable are derived from the changes that occur in the independent variables, the coefficient of determination will be equal to one. The more the coefficient is close to number one; this will give us an impression that independent variables have a huge impact on the dependent variable. We can also refer to (Adjusted  $R^2$ ) in order to explain the results with more accuracy.

Examining the total statistical significance of the model by using the (F) distribution. In case the calculated F value exceeded the tabular F value at 5% and multiple degrees of freedom, then the alternative hypothesis is accepted, stating that the model evaluation characteristics are not all equal to zero (Gujarati, 1995). We can also use the (F-sig.) that is shown in the statistical program and that displays its statistical significance.

## 11 Analyzing Data

In order to examine the relationship between independent variables (ROA & C.R) and the C.A\ T.A – as a dependent variable – for the industrial companies listed in Amman Stock Exchange:

- Calculating the value of independent variables represented by ROA and C.R for each company according to the above mentioned.
- Calculating the value of the dependent variable represented by C.A\T.A for each year included in the study, and according to the above mentioned equation.
- After finding the value of the dependent variable and the independent variables for each year included in the study the model will be evaluated in order to extract the results.
- The Table below shows Measures of central tendency and dispersion of the study variables:



Table 1: Measures of central tendency and dispersion of the study variables

	C.A\T.A	ROA	C.R
Observations	300	300	300
Mean	0.1512	29.33	2.44
Std. Deviation	0.4366	20.34	1.99
Skewness	2.99	0.677	-0.44
Kurtosis	39.77	-0.0767	9.70
Minimum	-1.99	0.47	0.89
Maximum	4.14	40.667	4.99

- The Table below shows the correlation between the study variables, the matrix of correlation shown in Table (2) has been studied in order to make sure there's no strong relationship between each of the independent variables. The results reveal the absence of a strong correlation between these variables. Moreover, this correlation won't have an impact on the convenience of the model as it's shown through the (VIF) values indicated in Table (3).

Table 2: The correlation between the study variables:

	C.A\T.A	ROA	C.R
C.A\T.A	1	-0.11	-0.019
ROA	-0.11	1	0.009
C.R	-0.019	0.009	1

- Table (3) indicates the results of evaluating the model between (ICA) and (ROA & C.R)variables:

Table 3: Results of evaluating the model

Variables	ICA (CA\TA)	T	Sig.*	VIF
ROA	-0.151	-2.871	0.000	1.032
C.R	-0.123	-0.414	0.005	1.021
R <sup>2</sup>	0.480			
R <sup>2</sup> -Adjusted	0.441			
Mean square	0.776			
F	4.587			
Sig.*	0.000 (a)			

When we analyze the adjusted coefficient of determination R<sup>2</sup> as indicated in Table 3. We conclude that the (R<sup>2</sup> -adjusted) value corresponds to 44.1%, which indicates that 44.1% of changes occurring in the (CR & ROA) derive from the changes that happened in the (ICA).

## 12 Test Hypotheses

### 12.1 The Main Null Hypothesis

**H<sub>0</sub>:** there are no significant relationships between the investments in current assets and profitability & liquidity in companies listed in Amman stock exchange- industrial sector.

- Table 3. Shows the result of the examination of this hypothesis. The above mentioned results indicate that the P value (Sig\*) (corresponding to 0.00) neighboring the F Statistic value (corresponding to 4.587) is less than (-1) with a confidence level of 5%. This means that the Null hypothesis is rejection according to the adopted decision support; subsequently, there's a statistically significant relationship between the independent variables & the dependent variable. In other words, the alternative hypothesis is accepted.

### **12.2 The 1<sup>st</sup> sub Null Hypothesis**

**H<sub>0-1</sub>:** there are no significant relationships between the investments in current assets and profitability in companies listed in Amman stock exchange- industrial sector.

- Table 3. Shows the result of the examination of this hypothesis. The above mentioned results indicate that the P value (Sig\*) (corresponding to 0.00) is less than (-1) with a confidence level of 5%. This means that the Null hypothesis is rejection and Accept alternative hypothesis.

### **12.3 The 2<sup>nd</sup> sub Null Hypothesis**

**H<sub>0-2</sub>:** there are no significant relationships between the investments in current assets and liquidity in companies listed in Amman stock exchange- industrial sector.

- Table 3. Shows the result of the examination of this hypothesis. The above mentioned results indicate that the P value (Sig\*) (corresponding to 0.005) is less than (-1) with a confidence level of 5%. This means that the Null hypothesis is rejection and Accept alternative hypothesis.

## **13 Results**

There are significant relationships between the investment in current assets and profitability & liquidity in companies listed in Amman stock exchange- industrial sector.

There are significant relationships between the investment in current assets and the liquidity in companies listed in Amman stock exchange- industrial sector.

There are significant relationships between the investments in current assets and the profitability in companies listed in Amman stock exchange- industrial sector.

This study reveal that there is no relationship between the ROA & CR, so the results above didn't affect by the relation between the independent variable (and if there any relation between them its un significant)

## **14 Recommendations**

The determination of the level of investment in current assets represents the exchange process between risk and return, so; if the ratio of current assets to total assets high, then the industrial companies follow a policy that reduces the risk because of the low probability of companies ability to cover their liabilities in the short term, but this will reduces the profitability because of it could that money be invested in fixed assets that achieve greater profitable. But if the investment in current assets level is low, meaning that the ratio of

current assets to total assets is low, it means that the industrial companies follow policy risk taker, but it increases profitability due to increased investment in fixed assets that achieve greater profitability.

Therefore; researchers recommended industrial companies to follow a moderate policy of investment in fixed assets. So that the ratio of current assets to fixed assets shall be moderate, reflecting a reasonable degree of risk and acceptable profitability which make some equilibrium between risk and return

Through the this study, the researchers found that the independent variables (profitability, liquidity) was able to interpret 44.1% of the sample, so that they recommend a future researcher to find a other factors might be more ability to interpret these changes in variables.

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