

# Efficiency of Working Capital Management and Profitability of UAE Construction Companies: Size and Crisis Effects

Haitham Nobanee

College of Business Administration, Abu Dhabi University and the University of Liverpool, P.O. Box 59911, Abu Dhabi, United Arab Emirates.

\*Email: [nobanee@gmail.com](mailto:nobanee@gmail.com)

## Abstract

This paper aims to examine the relationship between the efficiency of working capital management and profitability of construction firms listed in the United Arab Emirates stock markets. The results show a negative and significant relationship between net trade cycle for all construction firms and large construction firms. The coefficient of small firms is positive and insignificant, this indicates that small construction firms do not manage their working capital efficiently. The results also show a negative and significant relationship between the net trade cycle and profitability of construction firms during crisis periods. This indicates that UAE construction companies are more efficient in managing their working capital during the crisis period.

**Keywords:** Working Capital Management; Net Trade Cycle; Profitability; Small Firms, Financial Crisis

**JEL Classification:** G30, G32, L25, O25

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## 1. Introduction

Efficient management of working capital is critical for a construction firm's ability to cope with weak financial conditions and increased economic uncertainty, especially during crises periods (Mun and Jang, 2015). Firm's performance can be enhanced not only through long-term financial decisions of capital budgeting, capital structure, and efficient operations, but also through efficient management of working capital management (Mun and Jang, 2015). Primarily, efficient management of working capital is an essential part of the overall firm's strategy (Padachi, 2006) and is anticipated to participate positively in the firm's value creation (Nazir & Afza, 2009). In firms of all sizes, an essential point of administration bookkeeping schedules is to control key ranges, screen, and assuredly enhance, execution. Little firms need to especially control and screen their working capital. This is on account that they are in largely connected with a higher extent of current possessions in respect to extensive firms, less liquidity, unpredictable money streams, and a dependence on a fleeting obligation (Peel et al. 2000). Proof proposes that moderately few little firms use essential working capital administration schedules and they demonstrate a more noteworthy pervasiveness of specially appointed or subjective working capital choice making. An absence of formalization does not so much infer that a little firm is inadequately controlled (Perren, & Grant, 2000). Notwithstanding, Peel and Wilson (1996) state that more diminutive firms ought to embrace formal working capital administration schedules so as to diminish the likelihood of business conclusion, and also to improve business execution.

Several studies done previously focus on the working capital management of larger firms or non-financial firms (Abbas et al., 2017; Nobanee and Abraham, 2014; Nobanee, 2014, Nobanee and Haddad, 2014; AlShattarat et al., 2010; Nobanee, 2017), existing literature on working capital management in the UAE context are rare particularly on construction firms and small firms (Kasiran et al. 2015, and Nasruddin ,2006). The firm's size is an important factor in deciding the perceptions on working capital management (Nobanee and Abraham, 2015). Moreover, the size makes small firms more vulnerable to working capital fluctuations (Padachi, 2006). Rafuse (1996) also argued that insufficiency of working capital is one of the major reasons for the bankruptcy of small firms in the developed as well as the

developing countries. Working capital management practices are essential during crisis periods as most of the firms reduce their capital expenditure, cash, and inventory levels. During crisis periods creditworthiness of firms became more important because of the shortage of credit availability (Vikash et al. 2014). During the economic crisis, companies optimize their assets and increase the efficiency of financing through active management of working capital management.

The health of the construction sector in the UAE is highly important to the UAE economy, consequently, it's essential to examine the efficiency of working capital management of small and large companies in the UAE in both crises and non-crises periods. Thus, the purpose of this study is designed to examine whether working capital influences construction firms' profitability. More specifically, the objectives of this paper are (1) to investigate the impact of the efficacy of working capital management measured using the net trade cycle (NTC) on construction firms' profitability measured by the return on assets (ROA); (2) to measure the length of NTC for all, large and small construction firms and to test the impact of the length of the NTC on firms profitability for all size levels ; and (3) to examine the impact of the efficacy of working capital management measured using the net trade cycle (NTC) on construction firms' profitability measured by the return on assets (ROA) during crises and crisis periods . By fulfilling the above objectives, this paper will contribute to the working capital management body knowledge by providing a better understanding of the relation between the efficiency of working capital management and profitability of UAE construction companies. It should also be noted that, to the best of my knowledge, this study is the first paper that attempts to provide a better understanding of working capital management and profitability for UAE construction companies.

The remainder of this paper is organized as follows: Sections 2 discuss data and methodology to be estimated. The empirical results are presented in Section 3 and Section 4 concludes.

## 2. Data and Methodology

The data was collected from the annual reports of all construction companies listed on both Abu Dhabi Stock Exchange and Dubai Financial Market for the years 2003-2013. Our final sample includes 122 year-firm observations.

In this study we hypothesize a negative and significant relationship between the efficiency of working capital management measured by the net trade cycle and firms profitability measured by return on assets for all construction companies listed on the UAE markets and for small and large construction companies before after the 2008 subprime mortgage crisis. The net trade cycle is an additive function and equal to the dyes sales in receivables plus days sales in inventory minus the payables period (Shin and Soenen, 1998; Nobanee and Abraham, 2014).

We have employed a Generalized Method of Moment Dynamic Panel-Data System Estimation with Robust Standard Errors is in this study. We used this estimation because some of our independent variables may be jointly correlated with the dependent variable and there could be a possibility of unobserved province specific effects correlated with our independent variables, and it is necessary to control for such unobserved province specific effects (Nobanee et al., 2011; Nobanee and Ellili, 2015a; Ellili and Nobanee, 2017-A; Nobanee and Ellili, 2017; Nobanee et al., 2017; Nobanee and Ellili, 2016; Nobanee and Ellili, 2014; Ellili and Nobanee, 2017-B) The robust estimation does not require any quality measures.

This estimation leads to the following equation:

$$roa_{it} = \alpha + \beta_1 roa_{it-1} + \beta_2 ntc_{it} + \varepsilon_{it} \quad (1)$$

Where  $(\Delta roa_{it})$  is the first difference of return on assets. The independent variables in the model include the differenced lagged dependent variable and  $(\Delta roa_{i,t-1})$  is the differenced lagged dependent variable of return on assets,  $(\Delta ntc_{it})$  is the first difference of net trade cycle and calculated as  $[(\text{Receivable} + \text{Inventory} - \text{Payable}) / \text{sales}] * 365$  (Shin and Soenen, 1998, Nobanee and Ellili, 2015b).

I have run this model for all construction companies listed in UAE markets as well as at the divisions' levels of the sample by crisis and non-crisis periods, and by size.

### 3. Results and Discussion

Table 1 reports the average length of the net trade cycle of all, small, and large UAE listed construction firms during the period 2003-2013. It also reports the average length of the net trade of UAE listed construction firms during the crisis and non-crises periods. The average length of the net trade cycle reflect the efficiency of managing the firm's working capital and it's the average length of time between paying cash for the raw materials and collecting cash from receivables (Shin and Soenen, 1998; Nobanee and Abraham, 2014). Short net trade cycle indicates less working capital tied in the operations and faster processing of materials and faster collection cash from receivables and this leads to high efficiency and performance (Nobanee et al. 2011, Nobanee and Alhajjar, 2014)). The results reported in Table 1 show that the average length of the net trade cycle of all UAE construction firms is 773.49 days and 1486.31 days for small construction firms and 440.84 for large UAE construction firms. This indicates that large construction firms are more efficient in managing their working capital comparing with small construction firms. The results also show that UAE construction firms are more efficient in managing their working capital during crises periods as the average length of the net trade cycle is 700.47 days comparing with 884.05 days during the non-crisis period.

Table 1: Length of the net trade cycle for the full sample and sub-samples

Sample/Variables	All	Small	Large	Crisis	Non-Crisis
NTC	773.49	1486.31	440.84	700.47	884.05

Table 1 reports the means of the net trade cycle (NTC) for the full sample and all sub-samples that includes small firms, large firms, crisis period and non-crisis period for a sample of 122 year-firm observations of listed UAE construction firms, for the period 2003-2013.

Table 2: Results of Dynamic Panel-Data Two- Steps Robust System Estimation

Sample/Variables	All	Small	Large	Crisis	Non-Crisis
NTC	-0.00055**	0.00024	-0.00005*	-0.00065**	0.00004**
Lag-ROA	-2.2356700	1.43876	0.68543	-0.460920	0.100960*

Table 2 reports the results of the dynamic panel-data two- steps robust system estimation for the relationship between the net trade cycle and firm's profitability for a sample of 122 firm-year observation of U.A.E. construction firms listed on the Abu Dhabi Stock Exchange and Dubai Stock Exchange, for the period 2001-2013. Dependent and independent variables are in the form of first difference. (ROA) is the return on investment, (NTC) is the net trade cycle, (Lag-ROA) is the lagged dependent variable. This robust estimation does not require any quality measures.

\* Significant at 95% confidence level, \*\*significant at 99% confidence level.

Table 2 reports the results of the dynamic panel-data two- steps robust system estimation for the relationship between the net trade cycle and firm's profitability for a sample of 122 firm-year observation of UAE construction firms listed on the Abu Dhabi Stock Exchange and Dubai Stock Exchange, for the

period 2001-2013. The results reported in Table 2 confirms the results reported in Table 1. The coefficients of the relationship between the net trade cycle and profitability for all and large construction firms are significant and negative and for the small firms is insignificant and positive. This means large firms are more efficient in managing their working capital comparing to small firms. The results also show that the coefficient of crises periods is significant and negative while the coefficient of non-crisis period is significant and positive. This means the shorter the net trading cycle associated with higher performance, and companies are more efficiently managing their working capital during crisis periods. During non-crises period, the results indicate that longer net trade cycle is associated with higher performance during non-crises periods, this can be interpreted by government support during these periods. In addition, the coefficients of the lagged dependent variable (Lag-ROA) indicates that values of ROA in the previous periods have a significant and positive effect on the current values of ROA during non-crisis periods.

#### 4. Conclusion

The relationship between the efficiency of working capital management and profitability of construction firms listed in the United Arab Emirates stock markets was investigated in this study. This relation examined using dynamic panel data two- steps robust system estimation for the period 2001-2013. The analysis is applied at the levels of the full sample and divisions of the sample by crisis and non-crisis periods, and by size. The results show a negative and significant relationship between net trade cycle as a comprehensive measure of the efficiency in working capital management and profitability for the full sample. The result of the relationship between net trade cycle and profitability for small firms is positive and insignificant, this indicates that small UAE construction companies do not manage their working capital efficiently. However, large companies are more efficient in managing their working capital; the coefficient is negative and significant. The results also show a positive and significant relationship between net trade cycle and profitability of UAE construction firms during non-crisis periods and negative and significant relation during crisis periods. This indicates that UAE construction companies are more efficient in managing their working capital during the crisis period.

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