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WORKING CAPITAL MANAGEMENT AND PROFITABILITY OF FIRMS IN NIGERIA

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and

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Abstract

This study was conducted in order to ascertain the nature of the relationship between working capital management and profitability of firms in Nigeria. The cluster sampling and simple random sampling techniques were adopted in this study. From a population of 220 firms listed on the Nigerian Stock Exchange as at 31st December, 2011, a sample of 142 companies was selected. A cross-sectional data of firms for 2009-2011 was collected from the Nigerian Stock Exchange Fact Book and the annual reports of the sampled firms. The data collected were analysed using Ordinary Least Squares (OLS) regression technique. All of the explanatory variable (LQD, DBT, CCC) except CCC were positively associated with profitability of firms in Nigeria. It was also found out that only LQD is significantly associated with profitability. Based on the result of this study it was recommended amongst others that, the federal government of Nigeria, through her relevant agencies, should emphasize optimization of the liquidity of firms in Nigeria. This is necessary so as to enhance profitability of firms doing business in the Federal Republic of Nigeria.

Key words: *working capital, profitability, net profit, liquidity, debt, cash conversion cycle*

Introduction

Organisations, business enterprises, companies and firms invest in assets (fixed assets) which have long life span and which they use in carrying out their operations. These are the tools which these businesses use

in producing goods and services to meet the needs of their customers. The assets are used jointly with materials and finance to produce goods and services to meet the needs of customers. Investments in the capital a business need are necessary for the effective utilization of fixed assets in the firm. These investments necessary for the effective utilization of fixed assets, are known as Working Capital. This is the amount of capital that a business or a firm has to meet the day-to-day cash requirements of its operations (Parag, 2009). It is also that part of a company's capital that is required for financing short-term or current assets such as debtors and inventories amongst others.

Working capital, according to Isenmila, Eragbhe & Ogiedu (2010), involves activities such as arranging short-term finance, negotiating favourable credit terms, controlling the movement of cash, managing accounts receivables and monitoring the investments in inventories. It can be classified on the bases of concept and periodicity. On conceptual basis, it consists of gross working capital and net working capital (which is either positive or negative). On periodical basis, it consists of fixed or permanent working capital and variable working capital (which is either seasonal or special).

Liquidity and profitability is heavily dependent on the management of working capital because an inefficient working capital management might lead to lack of profitability which would lead to illiquidity or financial

crisis. According to Siddiquee & Khan (2009), a firm would manage to survive for a foreseeable future with the help of proper working capital management. If larger firms focus entirely on cash management, they might have fewer cash sales and the seasonality of funds could be affected. Raheman & Nasr (2007) stated that, medium-sized firms are mainly into inventory management, while less profitable firms engage in credit management and on the contrary, bigger firms follow a lenient credit policy towards its customers, so that, more capital is ploughed into inventory.

Several studies on working capital management and profitability of firms (e.g. Filbeck, & Krueger, 2005; Raheman & Nasr, 2007; Vedavinayagan, 2007; Samiloglu & Demirgunes, 2008; Amargit, Nahum & Neil, 2010; Hayajneh & Yassine; 2011) suggest improved profitability from improved working capital investments and concentrated on large firms operating within well-developed money and capital markets of developed economies. Findings from these studies become difficult to generalize for small-sized companies in developing economies like Nigeria, where firms mostly rely on finance from shareholders, trade-credits and short-term bank loans to finance their needed investments in working capital. This study, therefore, seek to find out the nature of the relationship between working capital management and profitability of firms in emerging economies like that of Nigeria.

Literature Review

This section provides a review of the literature on the dependent variable (net operating profit) and its determinants (liquidity, debt and cash conversion cycle).

Liquidity and Profitability

Liquidity ensures short-term survival i.e. the immediate survival of the company. It also tells you if a firm has enough cash to meet its

obligations. According to Pandey (2005), lack of liquidity can lead to insolvency. Profitability on the other tells you whether the company is sustainable, if it will keep functioning. It ensures long-term survival of the firm.

Eljelly (2004) tested the relationship between profitability and liquidity measures for 27 Saudi companies, from three non-financial sectors, over the period 1996-2000. The independent variables used in the regression models as measures of liquidity were the current ratio and the cash conversion cycle (CCC). Size was included as a control variable. The dependent variable was measured using net operating income before depreciation deflated by sales. The overall results showed that liquidity measures are significant and have negative relationship with profitability, and the importance of those measures differ across industries.

Raheman & Nasr (2007) studied the effects of selected working capital management (WCM) and liquidity measures on the profitability of 94 Pakistani companies listed on Karachi Stock Exchange over the period 1999-2004. They ran pooled least squares and generalized least squares regression models with cross section weights to test the relationship between profitability; the dependent variable, measured as the net operating income deflated by total assets and the following independent variables; the receivables conversion period (RCP), the inventories conversion period (ICP), the payables deferral period (PDP), the cash conversion cycle (CCC), and the current ratio (CR). They also used size, leverage, and the ratio of financial assets to total assets as control variables. The results showed significant and negative relationships between profitability and all working capital management (WCM) and liquidity measures. Furthermore, size showed a significant and positive relationship with profitability, leverage and the ratio of financial assets to total assets showed significant and negative sign with profitability.

Debt and Profitability

Debt refers to any amount of money, service or an item of property that is owed to an individual, group or government. Debt as a term has a strong effect on the profitability of a firm. Capital structure theory by Modigliani & Miller (1963) states that, whether a firm uses more of debt than equity or either 100% debt or 100% equity, the value will not be affected except for the deductibility of interest payments when calculating taxable income. In other words, a firm's value will be maximized when it employs more of debt in its capital structure than equity. When debt is used in the capital structure, the average cost of capital is reduced and profitability enhanced (Modigliani & Miller, 1963).

The use of high levels of debt in the capital structure leads to an increase or decrease in shareholders return. Debt is always desirable if a firm achieves relatively high profits as it results in higher returns to shareholders. If a firm incurs a major reduction in income, employing more debt in the capital structure will be detrimental as the firm won't be able to cover the cost of debt. That is, the relationship between debt and profitability of a firm is significant but can be negative (Ogbulu & Emeni, 2012). Debt is a financing strategy designed to increase the rate of returns on owners' investment by generating a greater return on borrowed funds than the cost of using the fund. It would be positive if returns on asset (ROA) are greater than the pre-tax interest rate paid on the debt. Negative debt occurs when a firm generates a returns-on-asset that is less than the pre-tax interest on debt.

According to Hayajneh & Yassine (2011), the use of debt reduces the amount of tax to be paid by a firm and increases the returns to shareholders. Besides the advantage of tax, cost of using debt is generally low as compared to equity due to the lower risk associated with debt as debt-holders have the

first claim in the case of insolvency. Debt also makes planning easy because interest cost on debt is fixed which gives room for efficient planning as the cost will be known. Though debt-usage has its share of benefits, it doesn't come without costs. Its major costs include bankruptcy, agency costs and loss of flexibility. The use of debt as a source of capital in relation to profitability should be done in line with its benefits and resultant costs. Its usage affects profitability of a firm. An efficient management of debt would increase firm profitability. The use of debt in the short-run, tend towards profitability but in the long-run, increase in the usage of debt tend to negatively affect profitability.

Cash Conversion Cycle and Profitability

Shin & Soenen (1998) investigated the relationship between the company's net trade cycle (NTC) and its profitability using a Compustat sample of 58,985 company-year observations over the period 1975-1994. Correlation and regression analysis were employed. The net trade cycle is basically equal to the CCC whereby all three components of the CCC; the receivables conversion period, the inventories conversion period and the payables deferral period, are expressed as a percentage of sales. This is done because the denominators for those three components are different which makes the addition not really useful. The Pooled and Cross-sectional regression models ran included the levels and changes in the following independent variables besides NTC; the current ratio, the total debt to total assets ratio, and sales growth. They tested the relationship between those independent variables and two dependent variables; profitability and stock returns. Profitability was measured as operating income minus depreciation deflated by either total assets or total sales. The results, using the levels and changes of dependent and independent variables, showed that a company with a short

NTC is more profitability and has a higher stock return. The results also showed that profitability is significantly negatively related to the current ratio and leverage, and significantly positively related to sales growth.

Deloof (2003) investigated the relationship between WCM measures and profitability for a sample of 1009 large Belgian non-financial companies over the period 1992-1996. He used regression models with fixed effects¹ and OLS regressions with dummy variable for time and industries. The dependent variable was measured using gross profit deflated by (total assets minus financial assets). The results for the regression models estimated with fixed effects showed that profitability increases with the increase in company size, sales growth, and fixed financial assets ratio. The CCC was not significant and showed a negative sign.

Eljelly (2004) tested the relationship between profitability and liquidity measures for 27 Saudi companies, from three non-financial sectors, over the period 1996-2000. The independent variables used in the regression models as measures of liquidity were the current ratio and the CCC. Size was included as a control variable. The dependent variable was measured using net operating income before depreciation deflated by sales. The overall results showed that besides liquidity as earlier reported above, CCC was found to be significantly associated with a firm's profitability.

Methodology

The cross-sectional survey research design was adopted in the study because the data were collected at a particular point in time. The population of the study is made up of the 220 companies listed on the floor of the Nigerian Stock Exchange as at 31st December, 2011.

The cluster sampling technique was adopted in this study. This was complemented with the simple random sampling technique.

The reason for the choice of the cluster sampling technique is that the population of study (the 220 firms listed on the Nigerian Stock Exchange) is distributed in eleven clusters/sectors. Cluster sampling technique will therefore make for proportional selection of samples such that the number of subjects selected from each region will represent its share of the entire population. For each company in a given cluster/sector to have equal chance of being selected, the simple random sampling technique was then introduced to arrive at a sample of 142 companies.

The data for the sampled firms were sourced from the Nigerian Stock Exchange Fact Book and the annual reports and accounts of the respective firms as at 31st December, 2011. The choice of the year 2011 is simply because of availability of data. The variables in this study were measured as follows (1) net operating profit before tax was used to proxy profitability which is the dependent variable and is denoted as NOP, (2) cash was used to proxy liquidity and is denoted as LQD (3) debtors was used to proxy debt and is denoted as DBT and (4) debtors' collection period was used to proxy cash conversion cycle and denoted as CCC.

Cross-sectional data of firms for 2009-2011 was collected for the analysis using an Ordinary Least Squares (OLS) regression technique with the aid of econometric software - SPSS. The reason for using cross-sectional analysis is because data is kept annually in Nigeria for all quoted firms and the choice of estimation technique (OLS) is because, when used on cross-sectional data, it tends to yield an unbiased and consistent result.

Model Specification

In this study, when testing the relationship between working capital management and profitability of firms in an emerging economy like that of Nigeria, it was done from the

perspective of the rational choice theory. The rational choice theory implies that a firm will take decision as to what constitutes its current assets and current liabilities after taking into cognizance the possible costs and benefits of such a decision. Therefore, working capital management decision on the part of a firm is a function of costs and benefits (profitability) accruing from such a decision.

WCM = (B, C).....(1)
 Where: WCM=working capital management decision
 B = economic benefits
 C = cost component

Relating the rational choice theory to economic benefits expected to be derived by a firm, the pooled regression is used, where the cross-section firm data is pooled together in a single column.

$$NOP = \beta_0 + \sum^n \beta X + \epsilon \dots\dots\dots (2)$$

Where:
 NOP = Net operating profit for the companies
 β_0 = The intercept of the equation.
 β = Coefficients of X variables
 X = The different independent variables for the working

capital management of companies i at time t.

ϵ = The error term

Assuming a linear relationship, after considering the working capital variables used in this study, we can write the above equation (2) in an explicit functional form as:

$$NOP = \beta_0 + \beta_1 LQD + \beta_2 DBT + \beta_3 CCC + \epsilon \dots\dots\dots (3)$$

Where:
 LQD = liquidity
 DBT=debt
 CCC = cash conversion cycle

$\beta_0, \beta_1, \beta_2$ and β_3 , are parameters to be estimated. The apriori expectation is that;

$$\beta_1 > 0, \beta_2 > 0, \text{ and } \beta_3 > 0, \beta_4 > 0$$

Note that 'ε' is the error term.

Result

The table below shows that our model for all the companies was able to measure 80% systematic variation in profitability of the firms. All the co-efficient of our variable liquidity and debtors were statistically significant at 5% level of significance. The Durbin-Watson statistics of 2.14 shows clearly an absence of positive auto-correlation.

Table: Estimation of Coefficient

Variable	Coefficient	Standard Error	T-Statistic	Probability
C	10.79347	1.392596	7.750613	0.4275
LQD	0.154857	0.056333	2.748964	0.0200
DBT	0.056155	0.067203	0.835601	0.5520
CCC	-0.074886	0.086835	0.862397	0.2106
R-squared	0.805779			
Adjusted R-squared	0.801262			
F-statistic	1.783020			
Durbin-Watson stat	2.135368			

Source: E-views 7.0 *significant at 5% level

The above tabular results can be represented in an equation form as shown below:

$$NOP = \beta_0 + \beta_1 LQD + \beta_2 DBT + \beta_3 CCC + \epsilon$$

$$0.154857 \quad 0.056155 \quad -0.074886$$

From the result in this study, β_0 is 10.79 which shows that the value of profitability when the value of liquidity, cash conversion cycle and

debtors assumed 0 value in log terms. The coefficient of log liquidity, 0.15, shows that a percentage variation in liquidity level generates a 0.5 level percentage change in liquidity and it assumes positive value. The t-statistics which is the test of its robustness is statistically significant at 5% level of significance. That is, there is a significant relationship between a firm's profitability and its liquidity.

β_2 which is the co-efficient of log (debtors) being at 0.836 shows that a percentage change in value of log debtor generates a 0.056% change in our profitability change. It has a positive value which shows that profitability and t-statistics move in the same direction. Our t-statistics of 0.83 could not pass our test of robustness at 5% level of significance, which shows that debtors or the amount of debt is not a major indicator of systematic variation of firms profitability. Then the coefficient of cash conversion cycle (β_3) - 0.075 - shows that a percentage change in the value of our cash conversion cycle generates a 0.075% change in our profitability level with t-statistics being 0.87, could not pass at 5% level of significance, which shows that it is not a major determinant of a firm's profitability.

R^2 shows that our model was able to explain 81% systematic variation in net operating profit and adjusting for degree of freedom was able to explain systematic variation in the value of our net operating profit. The F-statistics standing at 1.783 and which is the measure of overall goodness of fit shows that our model is very robust. The Durbin-Watson statistics at 2.1 shows that, the problem of auto-correlation has been taken care of.

The result from the agricultural sector shows a positive and significant relationship between net operating profit for the companies and liquidity; while debt and cash conversion cycle was found to be negative and not significantly associated with net operating profit for the companies. The result from the

conglomerate sector shows a significant relationship between net operating profit for the companies and all three independent variable (debt, cash conversion cycle and liquidity). The regression result from the construction/real estate sector reveals that there is a significant and positive relationship between net operating profit for the companies' liquidity; while the reverse is the case for debt and cash conversion cycle. The regression result from the consumer goods sector reveals that there is a significant relationship between all the independent variable (debt, cash conversion cycle and liquidity) and the dependent variable (net operating profit); though only cash conversion cycle is negative.

Based on the result for the financial services sector, all the independent variables have a significant relationship with net operating profit except liquidity. Though, only cash conversion cycle was found to be negatively associated with net operating profit. Result from the health sector shows that both cash conversion cycle and liquidity are significantly associated with net operating profit; and only debt is not significant and negatively associated with net operating profit. The regression result for the ICT sector show that there is a significant relationship between all the three independent variables (debt, cash conversion cycle and liquidity) and net operating profit. However, only cash conversion cycle has a negative relationship with net operating profit.

The regression result for the industrial sector show that only debt and liquidity are positively and significantly associated with net operating profit; while the cash conversion cycle was found to be negatively associated with net operating profit and also not significant. The regression result for the natural resources sector show that all the three explanatory variables (debt, cash conversion cycle and liquidity) are all positively associated with net operating profit. However,

only liquidity has a significant relationship with net operating profit. The oil and gas sector reported a positive association between net operating profit and all the three explanatory variables in this study. However, only debt was significantly associated. The services sector reported a positive relationship between debt, liquidity and net operating profit but only debt is significantly associated with net operating profit. The cash conversion cycle on the other hand was found not to be significant and negatively associated with net operating profit.

Discussion of Findings

The result of this study shows that only the liquidity of a firm is significantly associated with its profitability. This result is not surprising given the general notion that the more readily available funds a firm has the more positioned it is to take advantage of investing in projects with positive Net Present Values (NPV). This finding is in consonance with that of Deloof (2003) who investigated the relationship between WCM measures and profitability for a sample of 1009 large Belgian non-financial companies over the period 1992-1996 and found amongst others that the CCC was not significant and showed a negative sign. Also in consonance with this result is the result from a study by Eljelly (2004) who tested the relationship between profitability and liquidity measures for 27 Saudi companies, from three non-financial sectors, over the period 1996-2000 and found a significant but negative relationship with profitability and firm liquidity. Though, all the independent variables in this study with the exception of the CCC were found to be positively associated with profitability.

The negative relationship between CCC and profitability was not surprising because the longer the CCC the lesser the cash available to firms for investment purposes. This negative relationship is in agreement with the finding of Raheman & Nasr (2007). However, the not significant relationship between CCC and

profitability was quite surprising. With respect to the test of significance, the not significant relationship between CCC and profitability is not in tandem with that of Raheman & Nasr (2007) who studied the effects of selected working capital management (WCM) and liquidity measures on the profitability of 94 Pakistani companies listed on Karachi Stock Exchange over the period 1999-2004. Their results showed significant and negative relationships between profitability and all working capital management (WCM) and measures. The reason for this disagreement in results, with respect to the significance factor, maybe attributable to the smallness in the sample size used in Raheman & Nasr (2007) study when compared to this study.

Modigliani & Miller (1963) assertion that, whether a firm uses more of debt than equity or either 100% debt or 100% equity, the value will not be affected except for the deductibility of interest payments when calculating taxable income is not in consonance with the result from a study on capital structure and firm value in Nigeria by Ogbulu & Emeni (2012) where it was reported that the relationship between debt and profitability of a firm is significant but can be negative (Ogbulu & Emeni, 2012). In their study on the impact of working capital efficiency on profitability of Jordanian firms, Hayajneh & Yassine (2011) found that efficient management of debt increases firm profitability. However, they looked at the effect of time on these variables and concluded that, the use of debt in the short-run, tend towards profitability but in the long-run, increase in the usage of debt tend to negatively affect profitability.

With respect to the relationship between cash conversion cycle and profitability, Eljelly (2004) result shows that besides liquidity as earlier reported above, cash conversion cycle of a firm was found to be significantly associated with a firm's profitability. This result is not in agreement with the finding in

this study that the cash conversion cycle of a firm is not significantly associated with the firm's profitability. The researcher believes that this disagreement may be due to the smallness in the sample size (only 27 Saudi companies) taken by Eljelly (2004) from three non-financial sectors.

Conclusion

As hypothesized, the study concluded that there is a positive and significant relationship between working capital management, with respect to liquidity, and profitability of firms listed on the Nigerian Stock Exchange. This explains why the government of the Federal Republic of Nigeria through the Central Bank of Nigeria (CBN) emphasizes capital adequacy and invariably liquidity in firms, especially banks, operating in Nigeria as a major policy trust.

Policy Implication of Findings

The positive and significant relationship between liquidity and profitability of firms in Nigeria requires a policy shift on the part of the Nigerian government through its relevant agencies, for example; the Central Bank of Nigeria, with respect to liquidity in the economy.

Likewise, with respect to the not significant but positive relationship between debt and firm performance in Nigeria, managers of businesses in Nigeria need to revisit their mindset that debt financing of a business is very crucial to the survival of such businesses.

Also, the idea that the shorter the cash conversion cycle a firm has the more its profitability should be jettisoned when it comes to the Nigerian market that is adjudged weak-form efficient. This is because, based on the result of this study, there is no significant relationship between a firm's cash conversion cycle and its profitability. This therefore means that other explanatory variables like firm liquidity amongst others are attributable to profitability of firms in Nigeria.

Policy Recommendation

Based on the findings in this study, it is recommended as follows:

1. The federal government of Nigeria, through her relevant agencies, should emphasize optimization of the liquidity of firms in Nigeria. This is necessary so as to enhance profitability of firms doing business in Nigeria. This may be achieved by ensuring firms don't have too high or too low liquidity, because excessive liquidity can be counter-productive through accumulation of idle funds that don't fetch profits, while insufficient liquidity might damage the firm's goodwill or even forced liquidation.
2. Another result of interest in this study is that debt is positively associated with profitability of firms in Nigeria but not significant. This, therefore, means that equity financing as is currently practiced by quoted companies in Nigeria should be encouraged. And the submission of Modigliani & Miller (1963) that when debt is used in the capital structure of a firm it enhances profitability, should not be taken seriously in the Nigerian market that is weak-form efficient.
3. The negative and not significant relationship between the cash conversion cycle and profitability of firms in Nigeria simply means that firms in Nigeria should not bother much about the time lag between the expenditure for the acquisition or purchases of raw materials and the collections from the debtors on account of sales of finished goods or services. Honestly, this result is another surprising one. It is, therefore, recommended in this respect that, this result should be taken with a pinch of salt, because it might be attributable to the nature of the Nigerian capital market which as earlier pointed out is weak-form efficient. The researcher strongly recommends that further studies should be carried out in this respect.

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APPENDICES
APPENDIX 1: REGRESSION RESULT

AGRICULTURE SECTOR

Dependent Variable: O-PROFIT

Method: Panel Least Squares

Date: 08/22/13 Time: 08:31

Sample: 2009-2011

Cross-sections included: 4

Total panel (balanced) observations: 12

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	91323.79	470541.0	0.194083	0.8509
DEB	-0.172804	0.766522	-0.225439	0.8273
CCC	-327.8921	4301.446	-0.076228	0.9411
LIQ	0.460053	0.183437	2.507962	0.0365
R-squared	0.535179	Mean dependent var		453890.8
Adjusted R-squared	0.360871	S.D. dependent var		848674.1
S.E. of regression	678477.3	Akaike info criterion		29.95429
Sum squared resid	3.68E+12	Schwarz criterion		30.11593
Log likelihood	-175.7257	F-statistic		3.070305
Durbin-Watson stat	1.679501	Prob(F-statistic)		0.090891

CONGLOMERATES SECTOR

Dependent Variable: O-PROFIT

Method: Panel Least Squares

Date: 08/22/13 Time: 09:12

Sample: 2009 2011

Cross-sections included: 4

Total panel (balanced) observations: 12

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	1647907.	1362699.	1.209296	0.2611
DEB	1.124109	0.219871	5.112587	0.0009
CCC	-41373.81	14964.74	-2.764752	0.0245
LIQ	0.987665	0.373970	2.641027	0.0297
R-squared	0.793216	Mean dependent var		5253379.
Adjusted R-squared	0.715672	S.D. dependent var		4921280.
S.E. of regression	2624148.	Akaike info criterion		32.65961
Sum squared resid	5.51E+13	Schwarz criterion		32.82125
Log likelihood	-191.9577	F-statistic		10.22922
Durbin-Watson stat	2.483709	Prob(F-statistic)		0.004110

CONSTRUCTION/REAL ESTATE SECTOR

Dependent Variable: OPROFIT

Method: Panel Least Squares

Date: 08/28/13 Time: 19:08

Sample: 2009 2011

Cross-sections included: 3

Total panel (balanced) observations: 9

Variable	Coefficient	Std. Error	t-Statistic	Prob.
DEB	-0.031372	0.047450	-0.661162	0.5378
CCC	-7937.749	6978.825	-1.137405	0.3069
LIQ	1.283868	0.380230	3.376559	0.0197
C	-502052.2	932032.8	-0.538664	0.6132
R-squared	0.910874	Mean dependent var		3279020.
Adjusted R-squared	0.857398	S.D. dependent var		4473768.
S.E. of regression	1689416.	Akaike info criterion		31.81877
Sum squared resid	1.43E+13	Schwarz criterion		31.90642
Log likelihood	-139.1844	F-statistic		17.03338
Durbin-Watson stat	2.374002	Prob(F-statistic)		0.004675

COMSUMER GOODS SECTOR

Dependent Variable: O-PROFIT

Method: Panel Least Squares

Date: 08/26/13 Time: 03:13

Sample: 2009 2011

Cross-sections included: 16

Total panel (balanced) observations: 48

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	2068900.	1168086.	1.771188	0.0835
DEB	0.238431	0.111427	2.139806	0.0380
CCC	-22923.36	10889.42	-2.105104	0.0410
LIQ	0.276134	0.049365	5.593735	0.0000
R-squared	0.589613	Mean dependent var		4482234.
Adjusted R-squared	0.561632	S.D. dependent var		5749489.
S.E. of regression	3806700.	Akaike info criterion		33.22208
Sum squared resid	6.38E+14	Schwarz criterion		33.37801
Log likelihood	-793.3299	F-statistic		21.07196
Durbin-Watson stat	2.143311	Prob(F-statistic)		0.000000

FINANCIAL SECTOR

Dependent Variable: O-PROFIT

Method: Panel Least Squares

Date: 08/26/13 Time: 03:43

Sample: 2009 2011

Cross-sections included: 45

Total panel (balanced) observations: 135

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	1.28E+08	49868471	2.569379	.usi
DEB	0.014358	0.003091	4.645534	0.0000
CCC	561309.3	137444.8	-4.083889	0.0001
LIQ	0.183059	1.051568	0.174082	0.8621
R-squared	0.247704	Mean dependent var		1.38E+08
Adjusted R-squared	0.230476	S.D. dependent var		6.46E+08
S.E. of regression	5.67E+08	Akaike info criterion		43.17802
Sum squared resid	4.21E+19	Schwarz criterion		43.26410
Log likelihood	-2910.516	F-statistic		14.37789
Durbin-Watson stat	1.186033	Prob(F-statistic)		0.000000

HEALTH SECTOR

Dependent Variable: O-PRPFIT

Method: Panel Least Squares

Date: 08/26/13 Time: 03:53

Sample: 2009 2011

Cross-sections included: 7

Total panel (balanced) observations: 21

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-386243.8	427252.8	-0.904017	0.3786
DEB	-0.257566	0.232236	-1.109067	0.2828
CCC	13019.27	5784.738	2.250623	0.0379
LIQ	0.852905	0.136768	6.236152	0.0000
R-squared	0.755317	Mean dependent var		507927.9
Adjusted R-squared	0.712138	S.D. dependent var		948060.7
S.E. of regression	508661.0	Akaike info criterion		29.28659
Sum squared resid	4.40E+12	Schwarz criterion		29.48555
Log likelihood	-303.5092	F-statistic		17.49256
Durbin-Watson stat	2.906385	Prob(F-statistic)		0.000019

ICT SECTOR

Dependent Variable: O-PROFIT
 Method: Panel Least Squares
 Date: 08/26/13 Time: 04:06
 Sample: 2009 2011
 Cross-sections included: 8
 Total panel (balanced) observations: 24

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	82085.72	71348.73	1.150486	0.2635
DEB	0.195321	0.018856	10.35860	0.0000
CCC	-1418.115	345.6911	-4.102262	0.0006
LIQ	0.205937	0.054246	3.796374	0.0011
R-squared	0.852929	Mean dependent var		342745.7
Adjusted R-squared	0.830868	S.D. dependent var		534993.2
S.E. of regression	220019.6	Akaike info criterion		27.59183
Sum squared resid	9.68E+11	Schwarz criterion		27.78817
Log likelihood	-327.1020	F-statistic		38.66278
Durbin-Watson stat	1.457981	Prob(F-statistic)		0.000000

INDUSTRIAL SECTOR

Dependent Variable: O-PROFIT
 Method: Panel Least Squares
 Date: 08/26/13 Time: 04:25
 Sample: 2009 2011
 Cross-sections included: 26
 Total panel (balanced) observations: 78

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	518870.7	209688.5	2.474484	0.0156
DEB	0.133205	0.066073	2.016034	0.0474
CCC	-764.0030	762.0814	-1.002522	0.3194
LIQ	0.051250	0.030522	1.679085	0.0974
R-squared	0.582181	Mean dependent var		1015050.
Adjusted R-squared	0.565243	S.D. dependent var		2664383.
S.E. of regression	1756791.	Akaike info criterion		31.64580
Sum squared resid	2.28E+14	Schwarz criterion		31.76665
Log likelihood	-1230.186	F-statistic		34.37012
Durbin-Watson stat	0.777087	Prob(F-statistic)		0.000000

NATURAL RESOURCES SECTOR

Dependent Variable: O-PROFIT

Method: Panel Least Squares

Date: 08/26/13 Time: 04:30

Sample: 2009 2011

Cross-sections included: 5

Total panel (balanced) observations: 15

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-20624.51	72446.29	-0.284687	0.7812
DEB	0.089891	0.050460	1.781419	0.1024
CCC	274.5036	735.6061	0.373166	0.7161
LIQ	0.282477	0.097905	2.885218	0.0148
R-squared	0.613359	Mean dependent var		65540.80
Adjusted R-squared	0.507912	S.D. dependent var		98940.00
S.E. of regression	69405.41	Akaike info criterion		25.35650
Sum squared resid	5.30E+10	Schwarz criterion		25.54531
Log likelihood	-186.1737	F-statistic		5.816731
Durbin-Watson stat	1.725057	Prob(F-statistic)		0.012428

OIL AND GAS SECTOR

Dependent Variable: O-PROFIT

Method: Panel Least Squares

Date: 08/26/13 Time: 04:40

Sample: 2009 2011

Cross-sections included: 9

Total panel (balanced) observations: 27

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	878887.8	1192085.	0.737269	0.4684
DEB	0.180474	0.069216	2.607402	0.0157
CCC	6384.069	6599.882	0.967301	0.3435
LIQ	0.011338	0.103193	0.109869	0.9135
R-squared	0.280992	Mean dependent var		3001244.
Adjusted R-squared	0.187208	S.D. dependent var		4535408.
S.E. of regression	4088895.	Akaike info criterion		33.42140
Sum squared resid	3.85E+14	Schwarz criterion		33.61338
Log likelihood	-447.1889	F-statistic		2.996173
Durbin-Watson stat	0.473862	Prob(F-statistic)		0.051591

SERVICES SECTOR

Dependent Variable: O-PROFIT
 Method: Panel Least Squares
 Date: 08/26/13 Time: 04:48
 Sample: 2009 2011
 Cross-sections included: 15
 Total panel (balanced) observations: 45

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	161254.6	233241.2	0.691364	0.4932
DEB	0.154661	0.068269	2.265448	0.0288
CCC	-141.2101	1474.960	-0.095738	0.9242
LIQUIDITY	0.193249	0.130481	1.481044	0.1462
R-squared	0.187650	Mean dependent var		551265.7
Adjusted R-squared	0.128210	S.D. dependent var		838314.8
S.E. of regression	782732.2	Akaike info criterion		30.06366
Sum squared resid	2.51E+13	Schwarz criterion		30.22425
Log likelihood	-672.4323	F-statistic		3.156948
Durbin-Watson stat	1.083141	Prob(F-statistic)		0.034765