

Abstract

The purpose of this study is to examine the impact of working capital management on the profitability of BSE 500 listed companies of India and to understand whether the impact varies or remains unchanged for two different industries namely ferrous and non ferrous industries in India. In this paper, cash conversion cycle, accounts receivable period, accounts payable period and inventory conversion period has been used as a measure of the working capital management, whereas gross operating profit is used as a measure for a firm's profitability.

Introduction

Working Capital is a measure of both a company's efficiency and its short-term financial health. Management of working capital involves the management of inventory, accounts receivable and accounts payable and cash.

Studies on working capital management and profitability has shown a linear negative relationship that showed with lower working capital higher profitability can be achieved (Deloof (2003), Lazaridis and Tryfonidis (2006), Şamiloğlu and Akgün (2016)).

Samples and Variables

- Limited to BSE 500 companies over the period of 2011-2015.
- 392 companies after excluding financial firms.
- 1008 companies from ferrous and non-ferrous metal industries.
- Working capital involves management of accounts receivable, payable and inventories.
- CCC as a measure of working capital management (Wang 2002; Deloof 2003; Lazaridis and Tryfonidis 2006)
- Gross operating profit for measurement of profitability
- CCC and its individual constituents are regressed, one after the other, against measure of profitability, GOP.
- CCC = RCP + ICP – PDP (Lazaridis and Tryfonidis 2006) supported this division of CCC

Literature Review

- Lazaridis and Tryfonidis (2006) found a significant negative relationship between cash conversion cycle and profitability. (Athens Stock exchange) – maintain at optimum level
- Marc Deloof (2003) found a significant negative relationship between gross operating income and working capital. (Belgian firms).
- Sayed Mohammad Alavinasab and Esmail Davoudi (2013), Ben Ukaegbu (2014), Monica Singhania et al. (2014) found negative relationship - collect from debtors early and delay the payments to creditors.
- Sonia Banos-Caballero et al. (2011) have analyzed a concave relationship between working capital and firm profitability of SMEs

Hypotheses

Hypothesis 1 a - There is a negative relationship between the cash conversion cycle and profitability.

Hypothesis 1 b - There is a positive relationship between the payables deferral period and profitability.

Hypothesis 1 c - There is a negative relationship between the receivables conversion period and profitability.

Hypothesis 1 d - There is a negative relationship between the inventory conversion period and profitability.

Research Methodology

Regression analysis is used to find the relationship between profitability and working capital decisions. We make use of panel data analysis, in particular Fixed Effect and Random effect estimation, on our data sample. The choice between Random Effects Estimation and Fixed Effects Estimation is made based on the results of the Hausman test.

CCC and its individual constituents are regressed, one after the other, against our measure of profitability, GOP.

Model 1 – $GOP = \beta_0 + \beta_1 (ARP) + \beta_2 (size) + \beta_3 (debt\ to\ equity) + \beta_4 (current\ ratio) + \epsilon$

Model 2 – $GOP = \beta_0 + \beta_1 (APP) + \beta_2 (size) + \beta_3 (debt\ to\ equity) + \beta_4 (current\ ratio) + \epsilon$

Model 3 – $GOP = \beta_0 + \beta_1 (ICP) + \beta_2 (size) + \beta_3 (debt\ to\ equity) + \beta_4 (current\ ratio) + \epsilon$

Model 4 – $GOP = \beta_0 + \beta_1 (CCC) + \beta_2 (size) + \beta_3 (debt\ to\ equity) + \beta_4 (current\ ratio) + \epsilon$

Results

Regression analysis

BSE 500 -						
GOP	Coef.	Std. Err.	z	P> z	[95% Conf. Interval]	
ARP	-.0041615	.0009709	-4.29	0.000	-.0060645	-.0022585
Size	-.7039029	.0601927	-11.69	0.000	-.8218785	-.5859274
Debttoequity	-.017506	.0165997	-1.05	0.292	-.0500409	.0150288
Currentratio	-.0712666	.036752	-1.94	0.052	-.1432993	.0007661
_cons	6.042159	.4953151	12.20	0.000	5.07136	7.012959

For Ferrous and non-ferrous industries -

GOP	Coef.	Std. Err.	z	P> z	[95% Conf. Interval]	
ARP	-.0010645	.0002731	-3.90	0.000	-.0015998	-.0005292
size	-.081232	.050518	-1.61	0.108	-.1802454	.0177814
Debttoequity	-.0033375	.0168637	-0.20	0.843	-.0363898	.0297147
Currentratio	-.0010433	.0045216	-0.23	0.818	-.0099055	.0078189
Ferrous	.1849741	.6516799	0.28	0.777	-1.092295	1.462243
_cons	.4569148	.6687098	0.68	0.494	-.8537324	1.767562

Industry wise- Ferrous -

GOP	Coef.	Std. Err.	t	P> t	[95% Conf. Interval]	
ARP	-.0010692	.0002849	-3.75	0.000	-.0016278	-.0005105
Debttoequity	-.00334	.0176408	-0.19	0.850	-.0379243	.0312443
size	-.0853529	.0535392	-1.59	0.111	-.1903152	.0196094
Currentratio	-.0010635	.0046985	-0.23	0.821	-.0102748	.0081478
_cons	.6621235	.3226986	2.05	0.040	.0294803	1.294767

non-Ferrous -

GOP	Coef.	Std. Err.	t	P> t	[95% Conf. Interval]	
APP	-.0010091	.0001119	-9.02	0.000	-.001229	-.0007891
size	.0102392	.0064636	1.58	0.114	-.0024671	.0229455
Debttoequity	.0074618	.0051255	1.46	0.146	-.0026141	.0175378
Currentratio	.010197	.0066174	1.54	0.124	-.0028118	.0232058
_cons	-.0066799	.0353701	-0.19	0.850	-.0762117	.062852

Ferrous -

GOP	Coef.	Std. Err.	t	P> t	[95% Conf. Interval]	
CCC	-.0004124	.0001482	-2.78	0.005	-.000703	-.0001218
size	-.0738853	.0535766	-1.38	0.168	-.178921	.0311505
Debttoequity	-.0029757	.0176589	-0.17	0.866	-.0375955	.0316441
Currentratio	-.0006559	.0047053	-0.14	0.889	-.0098806	.0085688
_cons	.5477366	.3213606	1.70	0.088	-.0822836	1.177757

Conclusion

There is significant negative relationship of ARP on GOP for both BSE 500 and ferrous & non-ferrous industries but APP, ICP and CCC has no significant impact. Thus, it can be concluded that working capital decisions have an impact on corporate profitability. Hence, the performance of the firm can be improved by adopting suitable working capital strategies and so the managerial decisions on working capital must be made based on industries.