Determining Index of Working Capital Management for Indian FMCG Sector (Empirical Evidence on Its Contribution to Efficiency)

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Abstract

Firms with efficient working capital management generate more free cash flows will result in a higher business valuation. The present study aims to analyze the working capital management efficiency of firms in Fast Moving Consumer Goods industry in India selecting a sample of all the firms of CNX FMCG index of National Stock Exchange of India for the period from 2003-04 to 2014-15. Performance index, utilization index, efficiency index are used to measure the efficiency of working capital management. Therefore, all the null hypotheses set for the study are rejected. Empirical results proved that the Indian Fast Moving Consumer Goods industry performed remarkably well during the study period.

Keywords

Working Capital Management Efficiency, Indian FMCG Industry, Performance Index, Utilization Index, Efficiency Index.

Section I

1.1. Introduction

The working capital management is a delicate area in the field of financial management as it involves frequent decision-making [1]. The Working Capital Management Efficiency (WCME) is crucial as it decides the survival, liquidity, solvency and profitability of the business [2]. The WCME involves planning and controlling Current Assets (CAs) and current liabilities with an aim to eliminate the risk of

inability to meet the short term obligations and avoid excessive investment in these assets [3].

Modern financial management aims at reducing the level of current assets without ignoring the risk of stock outs [4]. The firms that have sustained working capital improvements have outperformed in terms of earnings. In efficiently run firms, cash runs freely; in others, cash gets trapped in WC, restricting the company's ability to grow. WC is an indicator of good management, as top WC performers have outperformed across all indicators [5].

1.2. Plan of the Paper

The paper is organized as follows: Section I gives the introduction and plan of the study. Section II presents the review of literature on the WCME. Section III explains research gap, problem statement, research objectives and hypotheses. Section IV covers the research methodology adopted in this study; the empirical analyses and discussions are presented in section V and concluding remarks, limitations, scope for further study, tables and references are reported in section VI.

Section II

2.1. Review of Literature

Many research studies have focused on financial ratios as a part of WCM, only few of them have discussed the WCME in specific applying the alternative ratio model, which are overviewed in this section.

Ghosh and Maji [6] examined the efficiency of working capital practices in Indian cement industry using [4] model, indices of performance, utilization and efficiency were used to measure the overall efficiency of working capital used. The results indicated that Indian cement industry not performed well during the study period in terms of working capital management.

Azhagaiah and Muralidharan [7] aimed at analyzing the relationship between working capital management efficiency and EBIT of the paper industry in India between 1997–1998 and 2005–2006. To measure the efficiency, performance index, utilization index and efficiency index are computed and found that the paper industry in India performed remarkably well during the period.

Afza and Nazir [8] examined the WCME in Pakistani cement firms in Karachi stock exchange market between 1998 and 2008, used three indicators of performance index, utilization index and efficiency index. The results revealed that the firms did not have an acceptable performance in the effectiveness of WCM during the period under study.

Farhan Shehzad et al. [9] examined the working capital management efficiency of the textile companies of Pakistan for the period of 2004 to 2009. Three index variables, performance index, utilization index and efficiency index were constructed and the results showed that all the indices of working capital showed the positive relationship with EBIT.

Section III
3.1. Research Gap

The large share of Fast Moving Consumer Goods (FMCG) in total individual spending along with the large population base makes India one of the largest FMCG markets. Even on an international scale, total consumer expenditure on food in India at US$ 120 billion is amongst the largest in the emerging markets, next only to China [12]. Literature review shows that researchers have conducted a number of studies on WCME in capital goods industry, cement industry, paper industry, and telecom industry and so on. It is not found that a study on WCME of FMCG industry in India applying alternative ratio model which is one of the reasons for motivating to conduct a similar kind of study in this industry. Hence the present study is an attempt to fill this gap.

3.2. Statement of the Problem

Faced with rising costs and competition, Indian FMCG firms are increasingly betting on expanding their geographical footprint with overseas acquisitions, expecting higher returns from international operations to offset lower growth in India. Hence, the present study will help the finance managers to frame policies for WCME of their firms. The importance of WCM in FMCG industry, its different components and the WCME leads to the problem statement in the study.

3.3. Research Objectives

- ❖ To evaluate the efficiency of performance of various components of current assets in increasing sales in the Indian FMCG industry.
- ❖ To examine the working capital management efficiency in utilizing the current assets of the Indian FMCG industry.
- ❖ To analyze the overall working capital management efficiency of Indian FMCG industry.

3.4. Research Hypotheses

H_0^1: There is no significant efficiency in performance of various components of current assets for increasing sales in the Indian FMCG industry.

H_0^2: The Indian FMCG industry does not have the ability to utilize its total current assets for generating sales.

H_0^3: The Indian FMCG industry does not have the efficiency in managing working capital.

Section IV

4. Research Methodology

To overcome the problem of improper theory of ratio analysis, Bhattacharya [4] developed an alternative ratio model for the measurement and monitoring WCME is used in this study.

4.1. Sample and Period of Study

All the firms of Nifty CNX FMCG Index of National Stock Exchange (NSE) India are considered as sample (Table I) for the study. The study is based on a secondary data collected from the database of Centre for Monitoring Indian Economy. The data related to a period of 12 years from 2003-04 to 2014-15 implying 180 observations for each index.

No.	Firm
1	Britannia Industries Limited
2	Colgate Palmolive (India) Ltd.
3	Dabur India Limited

4	Emami Limited
5	GlaxoSmithKline Consumer Healthcare
6	Godrej Consumer Products Ltd.
7	Godrej Industries Ltd.
8	Hindustan Unilever Limited
9	ITC Limited
10	Marico Limited
11	Nestle India Limited
12	Procter & Gamble India Ltd.
13	Tata Global Beverage Ltd.
14	United Breweries Ltd.
15	United Spirits Ltd.

Table I: Sample Firms

4.2. Variables and Indices used for the Study

The variables taken into consideration for the empirical analysis are various components of CAs viz., short-term investments, stock, accounts receivables, cash and bank balances, other CAs (accrued incomes, prepaid expenses, etc) and PI, UI and EI.

The performance index explains when the proportionate increase in sales is greater than the proportionate increase in different components of current assets during a particular period, then the firm can be said to have managed its WC efficiently. The utilization index symbolizes the ability of the firm in utilizing its current assets as a whole for the purpose of generating sales. It reflects the operating cycle of a firm. Efficiency index is a scale of performance which measures the combined effect of both performance index and utilization index.

4.3. Formulae used for the Study

The following formulae are used to measure the three indices of WCME:

PI	$\dfrac{I_s \sum_{i=1}^{n} \dfrac{W_{i(t-1)}}{W_t}}{N}$
I_s	St / S(t-1)
W	Average size of different components of current assets
N	Number of components in current
	assets
UI	A(t-1) / At
A	Total Current assets / Sales

4.4. Conceptual Framework

The following theoretical model explains the overall analysis adopted in the study:
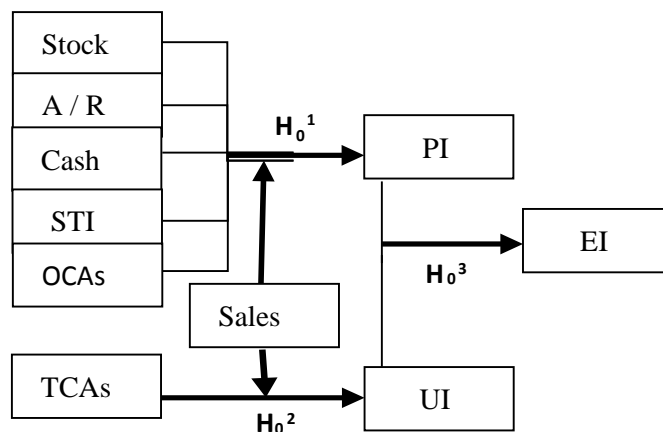
Section V

5. Analysis and Discussions

The results of the empirical evidence and interpretations are summarized in this section.

5.1. Values of PI, UI, and EI

Table II presents PI value varies from 0.3256 in 2007-08 (Colgate Palmolive (India) Ltd.) to 5.9582 in 2004-05 (Tata Global Beverage Ltd.). It is studied from the table, 13 out of 15 firms with PI >1 in 2008-09 and 2 out of 15 firms in 2010-11. Colgate Palmolive (India) Ltd. has PI > 1 in 10 years over the study period. During the study period all the firms (except ITC Ltd.) have the average score of PI > 1.

Table III shows 14 firms in 2008-09 and 3 firms in 2007-08 have UI > 1. Emami Ltd. has the maximum mean of 1.1375 and has UI > 1 in 10 years and ITC with a minimum mean of 0.9508 and has UI > 1 in 3 years only. Only 3 firms have EI > 1 which reveals that these firms are not able to utilize their CAs efficiently as a whole for generating sales.

Table IV reveals EI > 1 for 13 firms out of 15 in 2008-09 and only 3 firms scored well in 2007-08 and 2010-11. Though P&G has the highest mean value, Colgate Palmolive (India) Ltd. performed efficiently for the study period. Other than ITC Ltd., all the other firms scored EI well during the period under study.

5.2. Industry Averages of PI, UI and EI

Table V depicts the industry averages of the three indices. The WCME has highlighted the managerial aspects of performance of various CAs [12]. This statement is tested in H_0^1, PI of the industry as a whole shows average PI > 1 for 9 out of 12 years. It is found that the industry average of PI (μ=1.165) indicates that the Indian FMCG industry managed the components of CAs efficiently with respect to their performance. Hence, the H_0^1 is rejected.

The level of WC is a function of sales [13]. This statement is tested in H_0^2. The industry average of UI ranges from 0.819 in 2011-12 to 1.361 in 2009-10 and 7 out of 12 years have average UI > 1. The overall UI of the Indian FMCG industry for the selected period is 1.049 which indicates that the selected industry proved the efficiency in utilizing their CAs as a whole for generating sales. Hence, the H_0^2 is rejected.

Firm	03-04	04-05	05-06	06-07	07-08	08-09	09-10	10-11	11-12	12-13	13-14	14-15	μ	SD
Unit Spt	0.9235	1.0771	1.1512	0.5662	1.0231	1.1384	2.0480	0.7792	0.8449	1.3628	1.0239	1.7425	1.1496	0.3954
P&G	1.6187	0.9693	2.4008	3.7122	1.4807	0.7658	0.9039	0.6917	0.8632	1.0725	1.0386	0.8316	1.3168	0.8610
Nestle	0.9767	1.1041	1.5997	0.5916	1.0462	1.4912	0.8018	1.3233	0.5702	1.2166	0.8341	1.2283	1.0659	0.3143
Marico	0.8787	1.3756	0.9559	1.9431	0.4976	2.0585	1.1584	0.7904	1.0652	1.1572	0.7468	1.4032	1.1392	0.4602
ITC	1.0201	0.8476	1.0020	0.6725	0.7979	1.8490	0.8940	0.7344	0.7155	0.9825	0.9386	1.3289	0.9875	0.3121
HUL	1.0122	1.3735	1.1040	0.8964	0.8443	1.5476	0.7789	0.6100	1.2713	1.1307	0.9785	1.0973	1.0446	0.2525
Gdj.cons	1.0020	2.0164	0.8829	0.6884	0.7715	1.7617	0.8401	0.7353	0.7870	0.9540	1.6842	0.8738	1.0870	0.4400
Godrej	2.0540	0.9268	1.1791	0.8463	1.2228	1.5652	0.7550	0.8747	1.0696	0.9166	2.9108	1.0006	1.2613	0.6054
Glaxo	1.3404	1.0304	3.7203	0.9825	0.7359	1.7367	1.1841	1.4442	0.5333	1.0096	1.0592	0.7721	1.2660	0.8022
Emami	2.2310	1.4796	1.3244	0.8576	0.3256	1.9453	0.9169	0.6377	1.1649	1.1484	1.0268	1.3052	1.1793	0.5069
Unit Bre	1.0064	1.4822	1.3244	1.3997	1.7792	0.8574	1.6281	0.7580	1.1148	1.4581	0.5654	1.3252	1.1978	0.3655
Dabur	2.2334	1.312	1.3895	0.5573	0.8577	1.7015	0.9483	0.5848	0.9685	1.0517	1.0298	1.6459	1.1506	0.4761
Colgate	1.1991	1.8255	1.3899	1.1893	0.5851	1.8009	1.5784	0.3292	1.1170	1.1637	1.4324	1.1087	1.2398	0.4240
Tata Glo	0.8469	5.9582	0.9996	0.5837	0.6836	1.2346	1.1324	0.9401	0.7562	1.1846	1.0295	0.9725	1.3300	1.4035
Britann	1.4346	0.7395	1.5379	0.5839	0.8063	1.6995	1.6146	0.9029	1.1201	0.8588	1.2431	0.8423	1.1089	0.3650

Source: Computed results

Table II: Performance Index of Selected Firms during 2003-04 to 2014-15

Firm	03-04	04-05	05-06	06-07	07-08	08-09	09-10	10-11	11-12	12-13	13-14	14-15	μ	SD
Unit Spt	0.9482	1.1566	1.1227	0.6723	0.8004	1.2666	1.2132	0.8781	0.8898	1.1497	1.0040	1.2066	1.0278	0.1805
P&G	1.6473	0.9565	1.4785	1.6245	1.4944	0.6509	1.0430	0.4616	0.8792	1.1496	0.9399	0.6349	1.0528	0.3990
Nestle	1.0673	1.1792	0.9780	0.7564	0.9042	1.2935	0.9786	1.0920	0.7378	1.1260	0.7203	1.2236	1.0093	0.1863
Marico	0.9776	1.1375	1.0884	0.8349	0.6232	1.5062	0.7799	0.9260	1.1224	0.8897	0.9815	1.1763	1.0009	0.2172
ITC	0.8926	0.9563	0.9551	0.7238	0.7510	1.3349	1.0964	0.7685	0.7264	0.9857	0.9871	1.1329	0.9508	0.1809
HUL	0.9365	1.0791	1.1532	0.8497	0.8856	1.3220	0.8874	0.6417	1.2028	1.1671	0.9492	1.0812	1.0063	0.1819
Gdj.cons	0.8939	1.0963	0.9409	0.6361	0.8646	1.7392	0.8279	0.8868	0.6385	0.9631	1.6035	0.8127	0.9907	0.3284
Godrej	1.2063	0.9673	0.9855	0.5648	1.4582	1.0460	0.9675	0.9783	1.1376	0.5886	1.7885	1.0629	1.0627	0.3180
Glaxo	0.7678	1.0059	2.2580	0.8494	0.8364	1.0873	1.2165	1.0548	0.2866	0.9201	1.1684	0.7288	1.0023	0.4456
Emami	1.0754	1.4363	1.6484	1.0873	0.3278	2.1994	1.0259	0.5195	1.0484	1.1477	1.0352	1.1322	1.1375	0.4613
Unit Bre	0.7932	1.8835	0.4140	1.3607	1.2052	1.0104	1.3627	0.9421	0.8758	0.6484	0.6717	1.1446	1.0088	0.3851
Dabur	1.8683	1.0372	1.3525	0.5828	0.8258	1.2589	1.0093	0.6337	0.9762	1.0813	1.0206	1.3151	1.0705	0.3329
Colgate	1.1161	1.3786	0.8915	1.2396	0.5653	1.8485	1.1271	0.2463	1.1961	1.0386	1.3861	1.1660	1.1217	0.3968

| **Tata Glo** | 1.0361 | 1.3223 | 0.8759 | 0.7355 | 0.7072 | 1.2015 | 1.0053 | 1.2301 | 0.8824 | 1.0458 | 0.9986 | 0.9833 | 0.9992 | 0.1796 |
| **Britann** | 0.9140 | 0.9470 | 1.0946 | 0.6549 | 0.8270 | 1.6528 | 1.1505 | 1.0187 | 1.0094 | 1.0975 | 1.0926 | 0.9386 | 1.0204 | 0.2330 |

Source: Computed results

Table III: Utilization Index of selected firms during 2003-04 to 2014-15

Firm	03-04	04-05	05-06	06-07	07-08	08-09	09-10	10-11	11-12	12-13	13-14	14-15	μ	SD
Unit Spt	0.8757	1.2457	1.2925	0.3806	0.8188	1.4418	2.4847	0.6842	0.7518	1.5668	1.0279	2.1026	1.2311	0.5839
P&G	2.6665	0.9271	3.5496	6.0306	2.2128	0.4985	0.9428	0.3193	0.7590	1.2329	0.9762	0.5280	1.6309	1.6365
Nestle	1.0424	1.3019	1.5645	0.4475	0.9460	1.9288	0.7847	1.4450	0.4207	1.3699	0.6008	1.5029	1.1151	0.4618
Marico	0.8590	1.5648	1.0404	1.6222	0.3101	3.1004	0.9034	0.7320	1.1956	1.0295	0.7330	1.6506	1.1919	0.6959
ITC	0.9106	0.8106	0.9570	0.4867	0.5992	2.4682	0.9801	0.5644	0.5198	0.9685	0.9265	1.5054	0.9849	0.5257
HUL	0.9479	1.4822	1.2731	0.7616	0.7477	2.0459	0.6912	0.3915	1.5292	1.3196	0.9287	1.1864	1.0901	0.4401
Gdj.cons	0.8957	2.2106	0.8307	0.4379	0.6670	3.0640	0.6955	0.6521	0.5025	0.9189	2.7006	0.7101	1.1840	0.8759
Godrej	2.4778	0.8965	1.1620	0.4781	1.7830	1.6373	0.7305	0.8557	1.2168	0.5395	5.2060	1.0636	1.4761	1.2461
Glaxo	1.0292	1.0365	8.4006	0.8345	0.6155	1.8882	1.4405	1.5233	0.1528	0.9289	1.2376	0.5627	1.5711	2.1013
Emami	2.3991	2.1251	2.1832	0.9325	0.1067	4.2786	0.9406	0.3313	1.2212	1.3180	1.0630	1.4778	1.4958	1.0731
Unit Bre	0.7984	0.5483	1.9047	2.1443	0.8663	2.2187	0.7141	0.9764	0.9454	0.3798	1.5169	1.2696	0.7620	0.7620
Dabur	4.1727	1.1733	1.8794	0.3248	0.7083	2.1420	0.9571	0.3706	0.9455	1.1371	1.0511	2.1645	1.3728	1.0295
Colgate	1.3383	2.5165	1.2391	1.4742	0.3307	3.3289	1.7790	0.0811	1.3360	1.2087	1.9856	1.2928	1.5265	0.8416
Tata Glo	0.8774	7.8785	0.8755	0.4293	0.4834	1.4834	1.1384	1.1564	0.6673	1.2388	1.0281	0.9563	1.4729	1.9468
Britann	1.3112	0.7002	1.6834	0.3823	0.6668	2.8090	1.8576	0.9198	1.1306	0.9426	1.3583	0.7905	1.1883	0.6392

Source: Computed results

Table IV: Efficiency Index of Selected Firms During 2003-04 to 2014-15

Index	Esti mate	03-04	04-05	05-06	06-07	07-08	08-09	09-10	10-11	11-12	12-13	13-14	14-15	μ	SD
PI	μ	1.0060	1.3185	1.5558	1.4641	1.0714	0.8971	1.5436	1.1455	0.8091	0.9308	1.1112	1.1695	1.1652	1.1683
	SD	0.1721	0.4927	1.2688	0.7259	0.8247	0.3738	0.3835	0.3935	0.2773	0.2254	0.1615	0.5495	0.2957	0.1009
UI	μ	0.9835	1.0760	1.1693	1.1491	0.8782	0.8717	1.3612	1.0461	0.8186	0.9073	1.0000	1.0898	1.0493	1.0308
	SD	0.1537	0.3033	0.2519	0.4187	0.3120	0.3103	0.3820	0.1547	0.2690	0.2430	0.1779	0.2982	0.1940	0.0501
EI	μ	1.0088	1.5068	1.9107	1.8986	1.1285	0.8760	2.1988	1.2363	0.7160	0.8883	1.1110	1.4135	1.2674	1.3201
	SD	0.1537	0.3033	0.2519	0.4187	0.3120	0.3103	0.3820	0.1547	0.2690	0.2430	0.1779	0.2982	0.1940	0.0501

Table V: FMCG Industry Averages of PI, UI and EI Index during 2003-04 to 2014-15

A poor and inefficient WCM leads to tie up funds in idle assets and reduces the liquidity and profitability of a company [14]. This is tested in H_0^3. Numerically the overall EI > 1 indicates the WCME. EI of the industry as a whole shows average EI > 1 for 9 out of 12 years. The average WCME of the industry in respect of EI ranges from 0.716 to 2.199 explains on an average, firms of the industry adopted the aggressive WCM practices in 2011-12 and followed the conservative WCM practices in 2009-10. In terms of mean value of EI (μ =1.267), GlaxoSmithKline Consumer Healthcare is the most efficient firm followed by Colgate Palmolive (India) Ltd. Therefore, H_0^3 is rejected.

Section VI

6.1. Concluding Remarks

Empirical results reveal that the Indian FMCG firms performed remarkably well during the study period. The industry average for EI >1 is for 9 out of 12 years and therefore, firms of Indian FMCG industry are considered as Efficient with respect to PI, UI and EI of WCM. The results of present study are consistent with the previous empirical studies [7] – [9], [15] and are inconsistent with the previous studies [6], [10]. It can be concluded that all the null hypotheses from H_0^1 to H_0^3 are rejected. Thus, it can be said that the scope for the improvement in managing the components of current assets for generating increased sales is found well in the study.

6.2. Scope of Further Study

As evident from the empirical results, the selected firms of Indian FMCG industry performed well operationally in relation with WCME during 2003-04 – 2014-15. The question is left for future research to investigate the determinants of profitability in FMCG industry of India. The study also suggests that a further investigation may be helpful for identifying the forces that govern the nature of inefficiency present in all the firms of Indian FMCG industry in terms of WCM. Future research should investigate generalization of the findings beyond the Indian FMCG industry.

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