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Effect of WCM on the Profitability of Selected FMCG Companies – A Study

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Abstract

Corporate sustainability is a process of creating value of shareholders and stakeholders, by proper implementation of business strategies, considering the social, environmental, and economic factors. After the major crisis of 2007-08, the financial sustainability of businesses was badly affected. And now, due to the lockdown for COVID-19 around the world, productions are getting stopped, factories are closed, and the employed are becoming unemployed. Thus, corporate financial sustainability is essential to conglomerate the social, environment, and economic pillars. For developing financial sustainability, WCM plays a very important role in every industry. In this study, DTR, ITR, CCC, and return on net worth have been used to measure the influence of working capital management on profitability. In this study, the top four FMCG companies (HUL, ITC, Marico and Nestle) have been selected for analysis. The data of the said companies have been analysed through descriptive statistics, ADF unit root test, and least square regression equation (by using EViews 11 student version software). DTR, ITR, and CTR have a positive relationship with profitability, but CCC is negatively associated with profitability. Based on the findings, we can say that the firm's profitability is highly influenced by WCM. We also recommend that there is need to review the debtors, creditors, and inventory, periodically. Sales, purchase, and inventory departments are to work together as a united team, so that optimum inventory level can be maintained and profitability can be increased.

Keywords: Working Capital Management, Profitability, Debtors, Creditors, Inventory Turnover Ratio, Return on Net Worth, Cash Conversion Cycle, Corporate Financial Sustainability

JEL CODES: G32, G33, G35

Introduction

Corporate sustainability is a process through which shareholders' and stakeholders' value can be created by proper implementation of business strategies on the social, environmental, and economic aspect of business. These are known as the pillars of corporate sustainability. These pillars are very important for the prosperity of business. However, after the global financial crisis of 2007-08, the financial sustainability of the business was badly affected; after that, the financial researchers shifted their attention towards the economic aspect of sustainability. The corporate financial sustainability strengthens the other two pillars of sustainability.

At present, we are suffering from a pandemic situation caused by the coronavirus. All over the world, people are dying, production is being stopped, and factories are being locked down. All the three pillars of corporate sustainability are affected. The employed are becoming unemployed and the workers are dying. In society, people are not able to freely carry on with their activities, and the environment is becoming too harsh to leave. In this situation, the only way to revert to the previous situation is corporate financial sustainability. Corporate financial sustainability can conglomerate the three factors/pillars.

Working capital management plays an effective role in developing corporate financial sustainability, because liquidity, profitability, and solvency directly influence the working capital management. Through efficient WCM, corporate financial sustainability can be achieved.

WCM is the management of short-term finances. The assets are allocated in such a way that optimum benefit can be obtained and waste can be minimised (Brealey, Myers & Allen, 2013). The attention of WCM has been highlighted during recessions, and similar patterns in

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shifting attention during a crisis, for example, the oil crisis of the 1970s (Scholleva, 2012). The importance of WCM shifted from larger organisations to smaller organisations due to improvement of the economic climate. Larger organisations are more easily able to collect funds or financial support from external sources or markets, because of higher credit rating and quick issue of bond in the market. Thus, the varying availability of liquidity can affect the importance of WCM of companies (Benham, 2013; Sing, 2003).

Applicability and Generalisability of WCM: By subtracting current liabilities from current assets we get working capital. Current assets can be converted into cash or near cash item within a year. The most important elements of current assets are debtors or account receivables, inventories or stocks, and cash and/or near cash items. On the other hand, current liabilities include creditors, payables, bank overdraft, and so on. Working capital may be positive or negative. If current assets are greater than current liabilities, then the difference is known as positive working capital. On the contrary, when current liabilities are greater than current assets, then the difference is known as negative working capital.

WCM is related to profitability. The goal of WCM is to increase profitability in good, as well as in harsh economic climates (Gill et al., 2010). Russ Banham observed that the 1,000 largest public companies in Europe directed their attention to the WCM trend decreasing when companies gain strength after recession. In recent development, since 2012, it is found that the general increase in revenues is due to increasing large amount of net working capital. It implies that the companies are not efficiently managing their working capital, so that growing revenue is becoming too expensive.

Applicability and Generalisability in Emerging Economies: Research in the field of working capital is not new. From past studies, it is observed that WCM can influence the corporate profitabilitye.g. Shin and Soenen (1998), Hawawini, Viallet and Vora (1986), Deloof (2003), Lazaridis and Tryfonidis (2006). A company whose liquidity position is better can invest its funds in some shares of good companies, rather than working capital. With capital efficiency, the net present value of cash flows increases and it adds to the shareholders value. From the past studies, we can see that the WCM can increase the corporate profitability. However, what are the factors responsible for such development. In other words, what are the metrics that the management of the company must consider at the time of minimising its investment in working capital?

Working capital cannot be reduced to a minimum without considering operational activities of the business. Working capital is to be optimised and managed in such a way that it does not affect the future sales and profit. Companies which shorten the payment terms too much have problems selling their product in the market. Generally, buyers expect longer payment period, to enhance their own working capital or to judge the quality of the product. Another metrics is the inventory level. So by minimising the inventory level, the company is not able to take the advantage of a sudden increase in demand and miss out on sales. The other metric is creditors. By deferring the payments, companies can increase heavy financing rates of their credit or not get a discount for quick payment. These metrics may vary from industry to industry. Considering these metrics, we included cash conversion cycle which also has an impact on working capital management. However, whatever may be the situation and metrics, the need for working capital depends on the industry. In this study, we focused on the Indian FMCG sector.

Literature Review

Brealey and others (2013), in their book 'Working Capital Management' highlighted the effective levels, as well as the struggle to measure the WC efficiently. In this study, they also criticised the WCM. Pure model of WCM is still not found.

Banham (2013) also conducted a study on WCM stating that it is not solely managing short-term investment and financing. He opined that there are some aspects that might have to be considered at the time of determining the need for working capital.

Shin and Soenen (1998) conducted a study on working capital management and cash conversion cycle. In their study, they argued that CCC measures the amount of days it takes to receive payment from investment in resources. They also opined that CCC be used as a tool to measure the net changes in levels of inventory, AP, and AR.

Gill and Other (2010) made a study on working capital management and CCC. They considered inventory, receivables, and payables to calculate CCC. He opined

that the CCC model is not connected to investments in general, but directly to a company's refining process of suppliers.

The effect of working capital management on Belgian companies' profitability is studied by Deloof (2003). He collected data from the National Bank of Belgium, of 2,000 most important Belgian firms. He excluded companies from energy and water, banking and finance, and other services. He opined that for many firms, financial assets are a significant part of total assets.

Lazaridis and Tryfonidis (2006) conducted a study on the relationship between WCM and profitability of listed companies in the Athens Stock Exchange. They used CCC as a model of efficient working capital management, and gross operating profit as a determinant of profitability. The author observed a negative relationship between CCC and profitability.

Pai, Khan and Kachwala conducted a study on Data envelopment analysis – Is BCC model better than CCR model? Case of Indian life insurance companies. The paper was published in NMIMS Management Review in 2019. The author used two input and two output variables. The objective of the paper was to explain the limitations of the CCR model. The DMUs were separate business units. They opined that the BCC model is superior to the CCR model.

Pradeep Pai and others made a study on data envelopment analysis for setting benchmarks of efficiency, using two inputs and two outputs. The authors argued that in case of deficient divisions, instead of increasing the inputs to better the output, the DEA analysis recommends reducing the inputs. They also opined that the DEA was a wonderful method of benchmarking and enhancing productivity of services. It also provides sufficient directions for improvement.

About the Companies

HUL: HUL has been the biggest FMCG company in India for over 85 years. Around 19,000 people are working in the company. It is the subsidiary of Unilever, the biggest supplier of food. Now, HUL is selling their products in 195 countries. It has around 67% shareholding in HUL.

ITC: ITC Ltd. is an example of another FMCG company in India. It produces many products like food, personal care products, education and stationery products, incense sticks, cigarettes, and so on. It is one of the popular marketers in FMCG. The market capitalisation of ITC is nearly USD60 billion. Its gross sales value is USD10.9 billion. Around seven billion people's livelihoods are maintained and cared for by ITC.

Marico: Marico Ltd. is another of India's popular FMCG companies, providing consumer products and services in the areas of health, beauty, and wellness. Marico has emerging markets around 27 countries in Asia and Africa. In 2017, the company won the Flame award. In 2016, the company has won International business PR awards. Its market capitalisation is more than 26,000 crores.

Nestle: Nestle India is another leading consumer goods company in India. On 8 March 2018, its popular product, Maggi, completed 35 years of business in India. It produces different products, like milk and nutrition, beverages, chocolates, and confectionery items in India. The company is selling their products in many countries in Asia and Africa.

Research Gap

Working capital management and its effect on profitability in not new to us. Different studies have been conducted to measure the impact of working capital management on profitability of companies. Out of these studies, some are on the FMCG sector. In those studies, either current assets, current liabilities or account receivables, account payables, and cash balances are considered. In some studies, current ratios and liquid ratios are considered. However, in this study, we considered debtors turnover ratio, inventory turnover ratio, and creditors turnover ratio. We also computed CCC and measured the impact of these variables on Return on Net Worth, by using EViews. In this study, Augmented Dickey Fuller unit root test, Jarque-Bera statistics, and for normality test least square has been done, which has not yet been considered earlier.

Research Methodology

Research Statement: 'Effect of WCM on the profitability of the selected FMCG companies – A study'.

Hypothesis of the study:

H_0 – Null Hypothesis – Various variables or ratios have no significant impact on RONW of the selected FMCG companies.

H_1 – Alternative Hypothesis – Various variables or ratios have a significant impact on RONW of the selected FMCG companies.

About the Research Problem: In this study, we measure the impact of debtors turnover ratio, inventory turnover ratio, creditors turnover ratio, and cash conversion cycle on Return on Net Worth. In this study, we selected three Indian FMCG companies. We used the secondary data from Capitaline database. The data is for 15 years of all the companies selected in the study. By using EViews software 11 (student version), we find out unit root test (Augmented Dickey Fuller at level and at 1st difference), descriptive statistics, and also estimate the regression equation through least square method.

Research Design: In this study, we used an ex post facto method, and for selecting the companies, purposive sample technique has been used. The study is ex post facto, because we start with explanatory variable in this study and then observe the explainers variable, considering the effect of explanatory variable (Nelson, Krokeme, Markyarkson & Timipere, 2018).

In this study, four independent variables, such as debtors turnover ratio (Sales / Average Receivables), inventory turnover ratio (Cost of goods sold / Average inventory), creditors turnover ratio (Cost of goods sold / Average payables), and cash conversion cycle (CCC) (Days of sales outstanding + Days of inventory outstanding − Days of payables outstanding), have been used. Here, the dependent variable is Return on Net Worth (RONW). The independent variables shall be regressed against RONW. So we can write the following regression equation.

$$RONW = f(DTR, ITR, CTR, CCC)$$

We used the least square method to regress the above regression. Thus:

$$RONW = a_1 + b_1X_1 + b_2X_2 + b_3X_3 + b_4X_4 + E.$$

Where,

RONW = Return on Net Worth

X_1 = Debtors turnover ratio (DTR)
X_2 = Inventory turnover ratio (ITR)
X_3 = Creditors turnover ratio (CTR)
X_4 = Cash Conversion Cycle (CCC)
E = Error term.

Objectives of the Study: Objectives of the study are stated as follows:

- Profitability of the selected FMCG companies is to be evaluated by comparing profitability ratio RONW.
- Efficiency of the selected FMCG companies is to be analysed by comparing different turnover ratios.
- The impact of variables (ratios) on RONW of the selected FMCG companies is to be analysed.

Nature and Source of Data: The data for the study have been collected from Capitaline database from the University of Burdwan. The data are purely secondary data. Internet helped us collect other information.

Period of the Study: Our study covers a period of 15 years, from 2003-04 to 2017-18.

Sample Design: The purposive sample technique has been applied to select the leading FMCG companies from the FMCG industry.

Population: The population is the popular FMCG companies in India.

Sampling Units and Sample Size: Four FMCG companies have been selected as the sampling units in our present study. All the companies are either listed in the BSE and/or in NSE, or in India. Top four companies among the various companies have been selected for this study.

Tools and Techniques: In our study, we used Augmented Dickey Fuller unit root test, descriptive statistics, Jarque-Bera statistics, analysis of ratio, and various techniques of average (mean) and standard deviation. For evaluating the impact of various selected variables, least square regression analysis has been done. For multicollinearity, Durbin Watson test has been used.

Findings of the Study

From Table 1, the descriptive statistics of HUL shows that the mean values of RONW, DTR, ITR, CTR, and CCC are 84.64, 30.955, 9.35, 4.73, and −26.07, respectively. The Jarque-Bera statistics depicted that all the variables are normally distributed; the P value of RONW is 0.60, DTR is 0.64, ITR is 0.233, CTR is 0.80, and CCC is 0.98.

For stationarity test (i.e. statistical property which does not vary with time), we used Augmented Dickey-Fuller test. In this study, we considered level and 1st difference test. From Table 2, it is clear that for all the variables of HUL selected in this study, the statistics t_x value (ADF test value) is greater than critical values, at 1%, 5%, and 10% level of significance. So all the variables are not stationary at levels, but a few are stationary at 1st difference.

Table 3 depicts that the coefficient of DTR is −0.715, which means that 1% change in DTR leads to 71.50% negative change in RONW; however, it is insignificant at 5% level. Similarly, ITR has a coefficient of −18.95, which means that 1% change in ITR leads to 1895% change in RONW in the negative direction; it is also statistically insignificant at 5% level. CTR has a coefficient of 109.54, which means that 1% change in CTR causes 10954% change in the RONW in the positive direction; it is statistically insignificant at 5% level. CCC has a coefficient of −5.22, means that with 1% change in CCC, the RONW changes by 522% in the negative direction; it is also statistically insignificant at 5% level. From the table it is also clear that R squared is 0.633, whereas adjusted R squared is 0.486, implying that 48.6% of changes in Return on Net Worth is attributed to the joint effect of DTR, ITR, CTR, and CCC. The F-statistics of the estimation is 4.32, with a probability of 0.0275, signifying that the joint effect of independent variables on the dependent variable is statistically insignificant.

Table 1: Descriptive Statistics

	RONW	*DTR*	*ITR*	*CTR*	*CCC*
Mean	84.64333	30.95533	9.354667	4.730843	−26.0702
Median	87.23	30.12	8.68	4.565835	−28.5638
Maximum	130.01	40.92	13.42	5.573219	−7.86617
Minimum	52.82	22.65	7.54	3.474078	−45.727
Std. Dev.	24.46347	5.530728	1.772854	0.598575	9.116719
Skewness	0.231511	0.125899	1.079207	−0.26045	0.01991
Kurtosis	1.819493	1.836864	3.000903	2.342319	3.220164
Jarque-Bera	1.004992	0.885181	2.911722	0.439931	0.031286
Probability	0.605019	0.64237	0.233199	0.802547	0.984479
Sum	1269.65	464.33	140.32	70.96264	−391.053
Sum Sq. Dev.	8378.458	428.2454	44.00217	5.016082	1163.604
Observations	15	15	15	15	15

Table 2: Unit Root Test

Variables	*Signif. Levels*	*ADF @ Level*			*ADF @ 1St Diff*		
		ADF Test Value	*Critical Value*	*P-Value*	*Adf Test Value*	*Critical Value*	*P-Value*
RONW	1%	−1.256843	−4.004425	0.6178	−3.940646	−4.057910	0.0122
	5%		−3.098896			−3.119910	
	10%		−2.690439			−2.701103	
DTR	1%	−1.727981	−4.004425	0.3972	−2.551661	−4.057910	0.1269
	5%		−3.098896			−3.119910	
	10%		−2.690439			−2.701103	
ITR	1%	−2.990183	−4.004425	0.0603	−2.115209	−4.057910	0.2421
	5%		−3.098896			−3.119910	
	10%		−2.690439			−2.701103	
CTR	1%	−3.305949	−4.004425	0.0348	−6.315642	−4.057910	0.0003
	5%		−3.098896			−3.119910	
	10%		−2.690439			−2.701103	
CCC	1%	−4.770099	−4.004425	0.0026	−6.007248	−4.057910	−2.701103
	5%		−3.098896			−3.119910	
	10%		−2.690439			−2.701103	

Table 3: Estimation

Dependent Variable: RONW
Method: Least Squares
Date: 05/27/20 Time: 00:22
Sample: 1 15
Included observations: 15

Variable	*Coefficient*	*Std. Error*	*T-Statistic*	*Prob.*
C	−370.2900	246.8953	−1.499785	0.1646
DTR	−0.715070	2.967383	−0.240977	0.8144
ITR	−18.95452	13.49612	−1.404442	0.1905
CTR	109.5486	73.81983	1.483999	0.1686
CCC	−5.221478	3.874733	−1.347571	0.2075
R-squared	0.633460	Mean dependent var		84.64333
Adjusted R-squared	0.486844	S.D. dependent var		24.46347
S.E. of regression	17.52438	Akaike info criterion		8.826265
Sum squared resid	3071.040	Schwarz criterion		9.062282
Log likelihood	−61.19699	Hannan-Quinn criter.		8.823751
F-statistic	4.320537	Durbin-Watson stat		1.527056
Prob(F-statistic)	0.027572			

From Table 4, the descriptive statistics of ITC shows that the mean values of RONW, DTR, ITR, CTR, and CCC are 30.35, 37.29, 6.87, 5.38, and −34.97, respectively. The Jarque-Bera statistics depicted that all the variables are normally distributed; the P value of RONW is 0.50, DTR is 0.05, ITR is 0.508, CTR is 0.365, and CCC is 0.466.

For stationarity test (i.e. statistical property which does not vary with time), we used Augmented Dickey-Fuller test. In this study, we considered level and 1st difference test. From Table 5, it is clear that for all the variables of ITC selected in this study, the statistics t_x value (ADF test value) is greater than the critical values, at 1%, 5%, and 10% level of significance. So all the variables are not stationary at levels, but a few of them are stationary at 1st difference.

Table 6 depicts that the coefficient of DTR is 0.096, which means that 1% change in DTR leads to 9.6% positive change in RONW; however, it is insignificant at 5% level. Similarly, ITR has a coefficient of 1.503, which means that 1% change in ITR leads to 150.3% change in RONW in the positive direction; it is also statistically insignificant at 5% level. CTR has a coefficient of 0.482, which means that 1% change in CTR causes 48.2% change in the RONW in the positive direction; it is also statistically insignificant at 5% level. CCC has a coefficient of 0.046, which means that for 1% change in CCC, the RONW changes by 4.66% in the positive direction; it is also statistically insignificant at 5% level. From the table, it is also clear that R squared is 0.8452, whereas adjusted R squared is 0.7834, implying that 78.34% of changes in Return on Net Worth is attributed to the joint effect of DTR, ITR, CTR, and CCC. The F-statistics of the estimation is 13.66, with a probability of 0.000463, signifying that the joint effect of independent variables on the dependent variable is statistically significant.

Table 4: Descriptive Statistics

	RONW	*DTR*	*ITR*	*CTR*	*CCC*
Mean	30.35267	37.29667	6.878667	5.383151	−34.9703
Median	29.33	33.8	6.63	3.613861	−28.802
Maximum	36.27	65.56	9.06	11.06061	33.13458
Minimum	25.42	25.92	5.35	1.806931	−151.84
Std. Dev.	3.802838	11.00957	1.07688	3.46414	64.98677

	RONW	*DTR*	*ITR*	*CTR*	*CCC*
Skewness	0.388571	1.43053	0.698272	0.566624	−0.58863
Kurtosis	1.731375	4.03963	2.53826	1.608119	1.97385
Jarque-Bera	1.38335	5.791562	1.352213	2.013489	1.524332
Probability	0.500737	0.055256	0.508593	0.365407	0.466655
Sum	455.29	559.45	103.18	80.74727	−524.554
Sum Sq. Dev.	202.4621	1696.948	16.23537	168.0037	59125.93
Observations	15	15	15	15	15

Table 5: Unit Root Test

Variables	*Signif. Levels*	*ADF @ Level*			*ADF @ 1St Diff*		
		ADF Test Value	*Critical Value*	*P-Value*	*ADFTest Value*	*Critical Value*	*P-Value*
RONW	1%	−1.041341	−4.004425	0.7070	−2.195252	−4.057910	0.2163
	5%		−3.098896			−3.119910	
	10%		−2.690439			−2.701103	
DTR	1%	0.670070	−4.004425	0.9862	−2.732048	−4.057910	0.0951
	5%		−3.098896			−3.119910	
	10%		−2.690439			−2.701103	
ITR	1%	−0.226954	−4.004425	0.9138	−1.513892	−4.057910	0.4952
	5%		−3.098896			−3.119910	
	10%		−2.690439			−2.701103	
CTR	1%	−0.942316	−4.004425	0.7425	−2.930127	−4.057910	0.0687
	5%		−3.098896			−3.119910	
	10%		−2.690439			−2.701103	
CCC	1%	−0.671045	−4.004425	0.8233	−2.223030	−4.057910	0.2078
	5%		−3.098896			−3.119910	
	10%		−2.690439			−2.701103	

Table 6: Estimation

Dependent Variable: RONW
Method: Least Squares
Date: 05/27/20 Time: 00:34
Sample: 1 15
Included observations: 15

Variable	*Coefficient*	*Std. Error*	*t-Statistic*	*Prob.*
C	15.43647	5.191926	2.973169	0.0140
DTR	0.096749	0.071003	1.362608	0.2029
ITR	1.503830	1.311036	1.147055	0.2781
CTR	0.482246	0.486612	0.991029	0.3450
CCC	0.046684	0.035619	1.310669	0.2193
R-squared	0.845298	Mean dependent var		30.35267
Adjusted R-squared	0.783418	S.D. dependent var		3.802838
S.E. of regression	1.769781	Akaike info criterion		4.240790
Sum squared resid	31.32124	Schwarz criterion		4.476807
Log likelihood	−26.80592	Hannan-Quinn criter.		4.238276
F-statistic	13.66013	Durbin-Watson stat		1.742189
Prob(F-statistic)	0.000463			

From Table 7, the descriptive statistics of Marico shows that the mean values of RONW, DTR, ITR, CTR, and CCC are 37.84, 28.17, 7.32, 9.30, and 24.78, respectively. The Jarque-Bera statistics depicted that all the variables are normally distributed; the P value of RONW is 0.424, DTR is 0.850, ITR is 0.427, CTR is 0.861, and CCC is 0.742.

For stationarity test (i.e. statistical property which does not vary with time), we used Augmented Dickey-Fuller test. In this study, we considered level and 1st difference test. From Table 8, it is clear that for all the variables of Marico selected in this study, the statistics t_x value (ADF test value) is greater than the critical values, at 1%, 5%, and 10% level of significance. So all the variables are not stationary at levels, but a few of them are stationary at 1st difference.

Table 9 depicts that the coefficient of DTR is −0.7540, which means that 1% change in DTR leads to 75.40% positive change in RONW; it is statistically insignificant at 5% level. Similarly, ITR has a coefficient of −16.961, which means that 1% change in ITR leads to 1696.1% change in RONW in the negative direction; it is statistically insignificant at 5% level. CTR has a coefficient of 8.969, which means that for 1% change in CTR, the RONW changes in the positive direction by 896.92%; it is statistically insignificant at 5% level. CCC has a coefficient of −2.6691, which means that for 1% change in CCC, the RONW changes by 266.91% in the negative direction; it is statistically insignificant at 5% level. From the table, it is also clear that R squared is 0.4725, whereas adjusted R squared is only 0.2616, implying that 26.16% of changes in Return on Net Worth is attributed to the joint effect of DTR, ITR, CTR, and CCC. The F-statistics of the estimation is 2.239, with a probability of 0.137, signifying that the joint effect of independent variables on the dependent variable is statistically insignificant.

Table 7: Descriptive Statistics

	RONW	*DTR*	*ITR*	*CTR*	*CCC*
Mean	37.84667	28.17667	7.382	9.302063	24.78577
Median	33.71	27.17	7.57	9.505705	24.14723
Maximum	61.85	37.87	9.29	11.87752	49.76094
Minimum	25.26	18.78	5.37	7.005192	5.150748
Std. Dev.	11.52299	5.479301	1.475695	1.349841	12.92967
Skewness	0.741582	0.202016	−0.01766	0.023863	0.295908
Kurtosis	2.263926	2.404204	1.35162	2.310831	2.223661
Jarque-Bera	1.713489	0.323884	1.699002	0.29827	0.595593
Probability	0.424542	0.850491	0.427628	0.861453	0.742452
Sum	567.7	422.65	110.73	139.531	371.7865
Sum Sq. Dev.	1858.912	420.3183	30.48744	25.509	2340.469
Observations	15	15	15	15	15

Table 8: Unit Root Test

Variables	*Signif. Levels*	*ADF @ Level*			*ADF @ 1st Diff*		
		ADF Test Value	*Critical Value*	*P-Value*	*ADF Test Value*	*Critical Value*	*P-Value*
RONW	1%	−0.991037	−4.004425	0.7254	−2.401627	−4.057910	0.1596
	5%		−3.098896			−3.119910	
	10%		−2.690439			−2.701103	
DTR	1%	−1.934187	−4.004425	0.3088	−2.751358	−4.057910	0.0922
	5%		−3.098896			−3.119910	
	10%		−2.690439			−2.701103	
ITR	1%	−0.620052	−4.004425	0.8362	−3.606289	−4.057910	0.0218
	5%		−3.098896			−3.119910	
	10%		−2.690439			−2.701103	
CTR	1%	−2.835000	−4.004425	0.0785	−5.777314	−4.057910	0.0006
	5%		−3.098896			−3.119910	
	10%		−2.690439			−2.701103	
CCC	1%	−1.314151	−4.004425	0.5919	−3.367358	−4.057910	0.0329
	5%		−3.098896			−3.119910	
	10%		−2.690439			−2.701103	

Table 9: Estimation

Dependent Variable: RONW
Method: Least Squares
Date: 05/27/20 Time: 00:44
Sample: 1 15
Included observations: 15

Variable	*Coefficient*	*Std. Error*	*T-Statistic*	*Prob.*
C	167.0289	99.84713	1.672846	0.1253
DTR	−0.754052	1.150635	−0.655335	0.5270
ITR	−16.96163	13.36554	−1.269057	0.2332
CTR	8.969236	8.713324	1.029370	0.3276
CCC	−2.669161	1.869774	−1.427531	0.1839
R-squared	0.472572	Mean dependent var		37.84667
Adjusted R-squared	0.261601	S.D. dependent var		11.52299
S.E. of regression	9.901722	Akaike info criterion		7.684496
Sum squared resid	980.4411	Schwarz criterion		7.920513
Log likelihood	−52.63372	Hannan-Quinn criter.		7.681982
F-statistic	2.239988	Durbin-Watson stat		0.660091
Prob(F-statistic)	0.137253			

From Table 10, the descriptive statistics of Nestle shows that the mean values of RONW, DTR, ITR, CTR, and CCC are 81.85, 87.31, 11.06, 8.02, and −9.128, respectively. The Jarque-Bera statistics depicted that all the variables are normally distributed; the P value of RONW is 0.843, DTR is 0.840, ITR is 0.943, CTR is 0.435, and CCC is 0.507.

For stationarity test (i.e. statistical property which does not vary with time), we used Augmented Dickey-Fuller test. In this study, we considered level and 1st difference test. From Table 11, it is clear that for all the variables of Nestle selected in this study, the statistics t_x value (ADF test value) is greater than the critical values, at 1%, 5%, and 10% level of significance. So all the variables are not stationary at levels, but a few of them are stationary at 1st difference.

Table 12 depicts that the coefficient of DTR is 0.2424, which means that 1% change in DTR leads to 24.24% positive change in RONW; it is statistically insignificant at 5% level. Similarly, ITR has a coefficient of 17.689, which means that 1% change in ITR leads to 1768.9% change in RONW in the positive direction; it is statistically insignificant at 5% level. CTR has a coefficient of −33.939, which means that 1% change in CTR causes 3393.9% change in the RONW in the negative direction; it is statistically insignificant at 5% level. CCC has a coefficient of 2.959, which means that for 1% change in CCC, the RONW changes by 295.9% in the negative direction; it is statistically insignificant at 5% level. From the table, it is also clear that R squared is 0.6512, whereas adjusted R squared is only 0.5117, implying that 51.17% of changes in Return on Net Worth is attributed to the joint effect of DTR, ITR, CTR, and CCC. The F-statistics of the estimation is 4.667, with a probability of 0.021, signifying that the joint effect of independent variables on the dependent variable is statistically significant.

Table 10: Descriptive Statistics

	RONW	*DTR*	*ITR*	*CTR*	*CCC*
Mean	81.85067	87.31667	11.06733	8.020244	−9.12861
Median	84.28	86.14	11.12	7.770577	−9.60483
Maximum	124.22	111.01	12.88	10.29375	1.134999
Minimum	31.47	63.67	9.17	6.461719	−18.9129
Std. Dev.	26.78115	14.27712	1.038911	1.372058	7.270493
Skewness	−0.1183	−0.04677	−0.02549	0.654173	0.048769

	RONW	DTR	ITR	CTR	CCC
Kurtosis	2.30106	2.26111	2.570286	2.027496	1.528966
Jarque-Bera	0.340311	0.346693	0.117033	1.660957	1.358409
Probability	0.843533	0.840846	0.943163	0.435841	0.50702
Sum	1227.76	1309.75	166.01	120.3037	−136.929
Sum Sq. Dev.	10041.22	2853.708	15.11069	26.35559	740.041
Observations	15	15	15	15	15

Table 11: Unit Root Test

Variables	Signif. Levels	ADF @ Level			ADF @ 1st Diff		
		ADF Test Value	Critical Value	P-Value	ADF Test Value	Critical Value	P-Value
RONW	1%	−2.008632	−4.004425	0.2801	−2.001866	−4.057910	
	5%		−3.098896			−3.119910	
	10%		−2.690439			−2.701103	
DTR	1%	−1.639806	−4.004425	0.4377	−3.766764	−4.057910	0.0165
	5%		−3.098896			−3.119910	
	10%		−2.690439			−2.701103	
ITR	1%	−1.274213	−4.004425	0.6101	−6.682842	−4.057910	0.0002
	5%		−3.098896			−3.119910	
	10%		−2.690439			−2.701103	
CTR	1%	−1.258289	−4.004425	0.6172	−2.699985	−4.057910	0.1002
	5%		−3.098896			−3.119910	
	10%		−2.690439			−2.701103	
CCC	1%	−1.335685	−4.004425	0.5819	−2.633766	−4.057910	0.1114
	5%		−3.098896			−3.119910	
	10%		−2.690439			−2.701103	

Table 12: Estimation

Dependent Variable: RONW
Method: Least Squares
Date: 05/27/20 Time: 00:55
Sample: 1 15
Included observations: 15

Variable	Coefficient	Std. Error	T-Statistic	Prob.
C	164.1222	78.25880	2.097173	0.0624
DTR	0.242419	0.553469	0.437998	0.6707
ITR	17.68980	27.35870	0.646588	0.5325
CTR	−33.93979	37.54098	−0.904073	0.3872
CCC	2.959073	6.642285	0.445490	0.6655
R-squared	0.651228	Mean dependent var		81.85067
Adjusted R-squared	0.511719	S.D. dependent var		26.78115
S.E. of regression	18.71390	Akaike info criterion		8.957612
Sum squared resid	3502.100	Schwarz criterion		9.193628
Log likelihood	−62.18209	Hannan-Quinn criter.		8.955098
F-statistic	4.667997	Durbin-Watson stat		1.035279
Prob(F-statistic)	0.021965			

From the above findings, it is clear that the selected variables have an impact on profitability; however, statistically, such impacts are insignificant. So H_0, null hypothesis, is accepted, and we reject the alternative hypothesis H_1.

Conclusion

In this study, we investigated the effect of working capital management on the profitability of the firm. The return on net worth and working capital management, represented by debtors turnover ratio, is found to be negative and statistically significant for all the companies in the study.

The association between RONW and ITR is found to be negative and statistically insignificant for most of the companies in the study.

The relationship between RONW and CTR is found to be negative and statistically insignificant for most of the companies under study. It does not follow the theory.

Finally, the association between RONW and CCC is found to be negative and statistically insignificant for most of the companies in the study.

For stationarity, ADF unit root test and normality Jarque-Bera statistics have been used. The overall equation is statistically significant for the selected companies. From R^2, adjusted R^2, and F-Statistics, we can say that the joint effect of selected variables is statistically insignificant. Hence, we can conclude that effective working capital management has no significant impact on profitability of the firm.

Recommendation

There is need to review the debtors, creditors, and inventory periodically. Sales, purchase, and inventory departments are to work together as a united team, so that optimum inventory level can be maintained and profitability can be increased.

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