

The tradeoff between liquidity and profitability: evidence from Indian manufacturing firms

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Abstract: The main aim of this research paper is to examine the trade-off between liquidity and profitability of Indian firms. The target population of the study is manufacturing firms. The study used convenience sampling for collecting the data. The study is based on secondary data for the period from 2008 to 2017 and 20 Indian manufacturing firms are selected for this purpose. Analysis of the data has been undertaken using SPSS software. Findings revealed that current liabilities ratio have a positive and significant impact on earnings per share and profit after tax. On the contrary, the current ratio and quick ratio have an insignificant impact on earnings per share, return on capital employed, return on assets and profit after tax. This study suggests that managers should incorporate liquidity into their evaluation decisions in order to boost the financial return of their businesses. The current study offers valuable insights into the success of Indian listed companies for administrators, analysts, regulators, investors, and other interested parties. There is insufficient research that has been conducted to examine the trade-off between liquidity and profitability. Furthermore, findings from this literature cannot be relied upon as they are outdated. Therefore, this study is going to provide updated evidence on the trade-off between liquidity and profitability of Indian manufacturing firms, an area that has largely remained unexplored.

Keywords: Firm profitability, liquidity ratios, manufacturing firms, India

1. Introduction

Liquidity refers to the availability of funds to meet working capital requirements and how quickly current assets can be converted into cash. It has a vital impact on the overall smooth functioning of a company. Understanding the concept of liquidity is crucial to both external and internal analysts is demonstrating a firm's potential to conduct its day-to-day operations (Al-homaidi et al., 2020; Elangkumaran and Karthika, 2013). The concept of liquidity is important for a business as it signify its capacity to fulfil its short-term financial obligations. The common indicators of liquidity are the ones that are used by companies that have the existing amounts of cash and marketable securities, which are those that exceed their long-term liabilities. The current ratio establishes the relationship between short-term assets and liabilities. In general, a high current ratio indicates that the firm's potential to fulfil short-term financial obligations is strong, while a low fast ratio indicates a low connection between a firm's current liabilities and its corresponding current assets. Liquid assets refer to those assets that can be converted into cash easily without incurring losses against their current market value. A low current ratio signify that a business is unable to meet its short-term financial commitments to creditors, service providers, and suppliers of products and services on time. (Owolabi et al., 2011, Alahdal et al., 2016). Wang (2002) discovered that proactive liquidity management improves a firm's financial efficiency and typically results in a firm's increased market value. Effective liquidity management downgrades and removes the risk of being unable to fulfil short-term financial obligations as they mature, while also preventing undue investment in these

properties (Priya and Nimalathan, 2013). Profitability information is important in operational and financial decision-making since it is useful for financial managers, shareholders, and investment analysts as a yardstick for dividend payments, a measure for assessing management efficiency, and a tool for evaluating decision making (Nassirzadeh and Rostami, 2010). Profitability and its corresponding concept of liquidity constitute critical issues that all commercial entities should continue to research and consider as one of their primary responsibilities. Nassirzadeh and Rostami (2010) consider liquidity to be very important, since low-and-zero-profits companies can serve the economy while companies without liquidity cannot serve the economy. Liquidity management and operational profitability are substantial areas for the growth and long-term survival of a company that require management to strike-a-balance between them (Priya and Nimalathan, 2013). This paper aims to provide a review of literature on the relationship between liquidity and profitability of a firm using archival literature to explore the gap for future directions.

For any company, cash provides a protective shield and bulwark in its business operations. Thus, it serves as a backbone of working capital requirements and continuous business operations and its ultimate survival. (Boisjoly and Izzo, 2009; Gitman, 2009) noted that all companies must have an ample amount of funds that matches operational expenditure as dictated by the nature of the business operations to ensure continuous functioning (Boisjoly and Izzo, 2009; Gitman, 2009). The integrative model of managing cash largely rely on business operation cycle. Any deviations from this management stimulates a positive/negative impact on the effectiveness of working capital (Boisjoly and Izzo, 2009).

Ordinarily, firms hold cash to be in a position to pay for business operation expenditures such as compensations, taxation, dividends and essential operational needs. When a firm is able to synchronize its receipts and payments in its operations, it does not need to increase the current funds it holds as there is sufficient cash for its short-term needs. However, in practice, this is not always the case, as this synchronization is constantly violated. As a result, the firm resorts to raising the cash it holds as payments overtake receipts. One of the ways through which a firm or company can raise cash quickly is through investments in marketable securities, particularly those whose maturity matches with the terms of anticipated payments. This way is generally resorted to when the company has payments that are not perfectly matching with receipts. The motive of holding cash for this purpose is called the transaction motive.

The quick ratio and the current ratio are the most frequently used techniques or strategies for calculating liquidity and working capital requirements. The quick ratio is denoted by the difference between current assets and current liabilities, while the current ratio is equal to the difference between current assets and current liabilities. Additionally, these two ratios are used to assess corporate liquidity. Essentially, they determine if the business is able to meet its financial obligations through the sale of liquid assets (Farris et al., 2002). Nevertheless, several researchers including Emery (1984) and Kamath (1989) criticized these measures as they considered them to be static in nature. However, their opinions were largely ignored as several authors utilized them to evaluate corporate liquidity (“Bhunia et al., 2011; Bibi and Amjad, 2017; Elangkumaran and Karthika, 2013; Morgheim, 2015; Saleem & Rehman, 2011; Zygmunt, 2013”). Therefore, this study seeks to evaluate the trade-off between liquidity and profitability of Indian manufacturing firms. The rest of the paper is structured as follow: section 2 presents a review of prior studies, section 3 demonstrates the research design, section 4 interprets and discusses the results and finally, section 5 gives a brief conclusion of the paper.

2. Literature review

Numerous scholars have examined how liquidity affect profitability using conventional methods for determining liquidity of a firm, namely the liquidity ratio. Further, several researches indicate that there is a dearth of studies that address the issue of financial performance in India (e.g., Hashed & Almaqtari, 2020; Almaqtari & Hashed, et al., 2020; Farhan et al., 2019; Almaqtari & Al-Hattami et al., 2020; Al Maqtari & Ahdal et al., 2021; Hazaa, Almaqtari & Al-Swidi, 2021; Almaqtari & Al-Homaidi, et al., 2019; Al-Homaidi & Tabash, et al., 2018; Al-Homaidi & Almaqtari, et al., 2020; Al-Homaidi & Tabash, et al., 2019). Numerous studies were consistent in their observations whilst others were contradictory. In this fashion, Elangkumaran and Karthika (2013), Khidmat (2014), Mushtaq et al. (2015), Owolabi et al. (2011) and Saleem and Rehman (2011) performed their research in a variety of sectors of varying sample sizes with the aim of determining the link between “liquidity and profitability”. They all assessed liquidity using liquidity ratios and, profitability using a variety of different indicators. Owolabi et al. (2011) utilised the operational profit-to-turnover ratio; Khidmat (2014) used the return on assets and return on equity; and Elangkumaran and Karthika (2013) utilised the return on assets and earnings per share. Saleem and Rehman (2011), whereas on the other hand, the investigators applied three separate measures: “return on equity, return on assets, and return on investments”; in Mushtaq et al. (2015), meanwhile, the authors use return on assets. This investigation has shown to be quite beneficial in establishing a link between “liquidity and profitability”. However, while Panigrahi (2013) and Krishnakumar (2010) researched India's software, cement, and steel industries using both “traditional liquidity indices and alternative profitability metrics such as return on investment, gross profit margin, return on assets, and earnings per share”, Bhunia et al. (2011) and Panigrahi (2013) instead performed their research in these industries using both “the liquidity ratios metrics and alternative profitability metrics such as return on investment, gross profit margin, return on assets, and earnings per share”. Findings were consistent with the notion that lower liquidity was correlated with lower profitability. While researching the data from Morgheim (2015), Owolabi et al. (2011), and Rehman et al. (2015), the previously cited researchers discovered that there is a negative relation between liquidity and profitability, as measured by traditional indices, according to three additional research projects done in the United States, Nigeria, and Saudi Arabia

Niresh (2012) sought to unravel the profitability-liquidity link. The research indicated a “mixed association between the independent and dependent variables” (positive and negative). The author observed a negative link between the current ratio and net profit and return on capital employed, but a positive association between the current ratio and return on equity. Additionally, the quick ratio correlates positively with net profit and return on capital employed, but negatively with return on equity. Hemalatha and Under (2005) sought to ascertain the liquidity and profitability of the chosen societies. Their study incorporated trend analysis, ratio analysis, variance analysis, and average and correlation coefficient calculations. The study concluded that “SWCSs failed to maintain an appropriate current and liquid ratios, owing to the fact that none of the SWCSs examined provided enough protection to creditors”.

Using current liquidity indicators such as the detailed liquidity index, cash conversion period index, and net liquid balance index, researchers in “Kenya, Sweden, Nigeria, Turkey, Greece, Japan, Taiwan, and China” sought to establish the influence of liquidity on firm profitability. They arrived at diametrically opposed conclusions. Unlike previous researchers who relied on conventional indices to assess liquidity and its influence on profitability, “Nobanee et al. (2014), Tripathi & Ahamed (2016), Uyar (2009), Wang (2002), Ware (2015), and Yazdanfar and hman (2014)” chose to measure liquidity using a modern index, namely the cash conversion period. All of this research used “descriptive statistics, correlation analysis, and regression models” to evaluate the connection between variables. Liquidity, they found, had an adverse influence on profitability as defined by “return on assets, return

on equity, and return on investment”. In the Greek food business, Lyroudi & Lazaridis (2000) examined the link between liquidity as assessed by the cash conversion period and profitability as evaluated by “return on investment, return on equity, and net profit margin”. They established a positive association between the cash conversion period and return on assets, return on equity, and net profit margin using regression and correlation analysis, as well as t-tests on two distinct samples. Duncan et al. (2015) objectively investigated and quantified the influence of cash management on deposit-taking institutions' financial performances. They developed a “self-administered standardised questionnaire for 92 respondents and gathered secondary data from the audited financial statements of the SACCOs and the regulator (SASRA)”. The review of this study shows a strong positive relationship between cash management and financial performance. They recommended that SACCOs to accept deposits must have an appropriate cash management strategy in place to ensure optimum financial efficiency. By liquidity management (measured by the “cash flow management, credit policies, and cash conversion period of a firm”), Uyar (2009) argues that liquidity management has a significant impact on a firm's overall profitability.

Jihadi *et al.*, (2021) tested the link between firm value and liquidity, operation, leverage, and profitability. The sampling methodology used was a random sample of 22 index companies that were publicly traded on the Indonesian Stock Exchange between 2014 and 2019. The study indicated that the liquidity, operation, leverage, and profitability ratios all contribute significantly to firm value. Priya and Nimalathan (2013) and Zygmunt (2013) conducted studies in Poland and Sri Lanka, respectively, with a sample size of ten firms. They used correlation and regression analysis. Their research established a high association between business profitability and liquidity, as evaluated by contemporary and historical indexes. Nassirzadeh and Rostami (2010) and Sandhar and Janglani (2014), on the other hand, performed research in Saudi Arabia, Iran, and India, respectively. They used correlation and regression analysis to ascertain the trade-off between liquidity and profitability. Their study revealed that profitability and liquidity, as measured by both standard indexes, are adversely associated. There are only slight discrepancies in the research findings based on current liquidity indexes. According to Nassirzadeh and Rostami (2010) and Sandhar and Janglani (2014), although conventional liquidity indicators have a significant influence on profitability, current liquidity indices have a minor influence. Surprisingly, Bibi and Amjad (2017) examined the link between firm liquidity and profitability by examining the influence of all liquidity components on profitability on the Karachi Stock Exchange. They calculated liquidity using the cash difference in days and the current ratio. They established a substantial positive link between conventional profitability indicators and contemporary liquidity indices, but contemporary liquidity indices had a strong negative association with profitability.

Al-homaidi et al. (2019) studied the financial and operational liquidity factors that were important for all banks in India from 2008 to 2017. The findings indicate that “bank size, capital adequacy ratio, deposits ratio, operating efficiency ratio, and return on assets ratio all have a significant positive impact on liquidity, while assets quality ratio, asset management ratio, return on equity ratio, and net interest margin ratio all have a significant negative effect on liquidity”. Farhan et al. (2019) investigated the effect of liquidity ratios on the financial results of Indian pharmaceutical companies. They found that pharmaceutical companies have strong financial positions. Al-homaidi et al. (2020) analysed the factors of liquidity for Indian publicly traded companies. The study indicated that “debt, return on assets, and firm age” are the primary internal determinants of liquidity in India. Additionally, the findings indicate that among the internal determinants, “firm size, leverage ratio, return on assets ratio, and firm age” all have a substantial positive association with firms' liquidity, except for leverage ratio and firm age which have a negative relationship with firms' liquidity. Sari and Sedana (2020) results revealed that net income statement data and financial soundness have a “positive and significant” impact on the capital structure. As for financial soundness, net income has a significant effect whilst it

also serves to exacerbate capital structure, and deflate capital value. Dadebo and Afolabi (2020) examined the effect of liquidity management on the output of ten manufacturing firms from 2012 to 2016. The study discovered that the current ratio has a substantial negative effect on the profitability of the selected companies, while fast and cash ratios have a favourable but negligible effect on ROA. Putri and Wiksuana (2021) studied the effect of liquidity and profitability on firm value through the lens of dividend policy. The findings of this study indicate that liquidity has a significant negative impact on firm value, while profitability has a significant positive impact on firm value, and that the dividend policy is incapable of implying the effect of liquidity and profitability on firm value.

It is clear from the above discussion that there are a few studies that have analyzed the “trade-off between liquidity and profitability”. Furthermore, these studies are not recent, a situation that renders their outcome outdated. Therefore, this study seeks to provide updated evidence on the trade-off between liquidity and profitability of Indian manufacturing firms, which is an area that has not been widely focused on by researchers.

3. Research methodology

The target population of the study is manufacturing firms. The study used convenience sampling for collecting the data. The research is based on secondary data for the period from 2008 to 2017. 20 Indian manufacturing firms are selected for this purpose due to availability of data. The dependent variables are earnings per shares, return on assets, return on capital employed and profit after tax. The independent variables are cash to current liabilities, current ratio and quick ratio. In order to achieve the study objectives, descriptive statistics, correlation matrix and regression analysis are used and their results are interpreted further below. The following are the regression models which have been used in the analysis.

$$(\text{EPS})_{it} = \alpha + \beta_1 (\text{CTCL})_{it} + \beta_2 (\text{CR})_{it} + \beta_3 (\text{QR})_{it} + \varepsilon_{it} \quad (1)$$

$$(\text{ROCE})_{it} = \alpha + \beta_1 (\text{CTCL})_{it} + \beta_2 (\text{CR})_{it} + \beta_3 (\text{QR})_{it} + \varepsilon_{it} \quad (2)$$

$$(\text{ROA})_{it} = \alpha + \beta_1 (\text{CTCL})_{it} + \beta_2 (\text{CR})_{it} + \beta_3 (\text{QR})_{it} + \varepsilon_{it} \quad (3)$$

$$(\text{PAT})_{it} = \alpha + \beta_1 (\text{CTCL})_{it} + \beta_2 (\text{CR})_{it} + \beta_3 (\text{QR})_{it} + \varepsilon_{it} \quad (4)$$

Where:

(EPS)_{it} = Stands for earnings per share of firm I, at time t, defined by return on assets (ROA).

(ROCE)_{it} = Return on capital employed of firm I, at time t.

(ROA)_{it} = Return on assets of firm i at time t

(PAT)_{it} = profit after tax of firm i at time t.

(CTCL)_{it} = cash to current liabilities of firm i at time t.

(CR)_{it} = current ratio of firm i at time t.

(QR)_{it} = quick ratio of firm i at time t.

(α) = Common y-intercept.

(β_1 - β_3) = Coefficients of the explanatory indicators

(ε)_{it} = Stochastic error term of firm i at time t.

Table 1. Variable's description

Variable Name	Symbol	Formula	Expected Signs	
Earnings Per Share	EPS	$EPS_{it} = \frac{\text{Net profit}_{it}}{\text{number of equity shareholders}_{it}}$	+	(Al-ahdal et al.,2018)
Return on Capital Employed	ROCE	$ROCE_{it} = \frac{EBIT_{it}}{\text{Total assets} - \text{current liabilities}_{it}}$	-	(Al-ahdal & Prusty, 2020).
Return Assets	ROA	$ROA_{it} = \frac{\text{Net profit}_{it}}{\text{Total assets}_{it}}$	+	(Prusty. & Al-ahdal, 2018; Al-Ahdal et al.,2021)
Profit Tax	PAT	Net profit - tax	+	(Al-ahdal et al.,2018)
Cash to Current Liabilities	CTCL	$CTCL_{it} = \frac{\text{Cash \& Cash Equivalent} + \text{Marketable}}{\text{Total Current Liabilities}_{it}}$	-	
Current Ratio	CR	$CR_{it} = \frac{\text{current assets}_{it}}{\text{current liabilities}_{it}}$	+	(Al-Ahdal et al.,2020)
Quick Ratio	QR	$QR_{it} = \frac{\text{Cash} + \text{marketable securities} + \text{Accoun}}{\text{current lia}}$	+	

4. Data analysis

4.1 Descriptive statistics

Table (2) shows the central tendency for all variables used in the study. The central tendencies shown in table 2 are year-wise descriptive statistics except the last group which is based on the full study period. The results demonstrate the year-wise (from 2008 to 2017) descriptive statistics for the study variables, that is, earnings per share, return on capital employed, return on assets, profit after tax, cash ratio, current ratio and quick ratio.

Regarding the central tendency of all indicators in the article during the full period, table 2 shows that the mean value of earnings per share of the selected firms is 18.6930 with 41.8 standard deviation. The mean values of other profitability measures are 7.9529, 5.0362 and 460.3450 for return on capital employed, return on assets and profit after tax respectively, with 18.4, 15.1 and 2179.4 standard deviation respectively. Regarding the central tendency of independent variables, the mean values of "cash to current liabilities, current ratio and quick ratio" are .8836, 2.5347 and 2.0441 with 2.12955, 3.81524 and 3.67874 standard deviation, respectively.

Table 2. Descriptive statistics

Variables	Mean	Std. Deviation	Mean	Std. Deviation	Mean	Std. Deviation	Mean	Std. Deviation
EPS	35.658	65.104	19.834	26.249	21.506	31.252	17.193	26.027
ROCE	27.703	22.122	14.331	10.474	12.891	8.405	12.123	10.401
ROA	20.204	20.017	9.202	5.400	8.520	5.201	8.207	6.909
2008 PAT	1692.870	3153.259	2009 1241.880	1895.864	2010 822.550	1508.390	2011 504.590	462.518
CTCL	1.948	3.604	0.924	2.026	0.682	1.309	0.362	0.427
CR	5.583	9.746	2.684	2.777	2.923	3.568	1.680	0.859
QR	5.155	9.930	2.017	2.245	1.594	1.233	1.309	0.594
EPS	19.600	35.084	12.893	25.220	-2.301	23.430	16.456	44.157
ROCE	10.162	12.008	4.049	9.215	-0.849	10.980	-10.486	36.277
ROA	6.614	8.984	2.381	7.029	-1.623	8.369	-10.159	32.934
2012 PAT	465.330	1979.118	2013 224.690	1449.587	2014 -628.170	1757.402	2015 -399.310	3917.178
CTCL	0.794	1.938	0.684	1.645	0.417	0.979	1.343	3.774
CR	2.307	1.915	2.055	1.605	1.608	0.893	2.489	3.753
QR	1.761	1.790	1.812	1.696	1.345	1.065	2.118	3.848
EPS	20.547	54.058	25.544	66.581	18.693	41.806		
ROCE	2.814	14.219	6.791	8.330	7.953	18.482		
ROA	2.483	9.011	4.533	5.622	Whole period 5.036	15.153		
2016 PAT	17.820	2176.008	2017 661.200	1435.301	460.345	2179.426		
CTCL	1.311	2.524	0.371	0.480	0.884	2.130		
CR	2.597	2.917	1.421	0.586	2.535	3.815		
QR	2.161	2.801	1.169	0.580	2.044	3.679		

Notes: “Earnings per share (EPS), Return on capital employed (ROCE), Return on assets (ROA), Profit after tax (PAT), Cash ratio (CASHR), Current ratio (CR), Quick ratio (QR)”.

4.2 Correlation matrix

Correlation matrix is an econometric tool that examines the trend of relationship between the variables. It indicates the strength of the correlation between the study's factors. It also provides an indicator of multicollinearity absence and presence. Another critical aspect of the correlation matrix is revealing whether the multicollinearity issue exists among the variables, or not. Field (2009) suggested that “if any variable in the correlation matrix has a coefficient higher than 0.87 or 0.97”, it reveals the presence

of multicollinearity. The results in Table (3) reveal that there is no coefficient value greater or equal to 0.87 which confirm the absence of multicollinearity in the models. Pearson correlation is used to determine the trade-off between liquidity and profitability. The results in Table (3) indicate that the cash to current liabilities ratio, current ratio, and quick ratio all have a positive and statistically significant relationship with all profitability measures, including earnings per share, return on capital employed, return on assets, and profit after tax, for the entire sample period from 2008 to 2017.

Table 3. Correlation matrix

Variable	EPS	ROCE	ROA	PAT	CTC L	CR	QR	EPS	ROCE	ROA	PAT	CTCL	CR	QR
	2008/2009							2010/2011						
EPS	1	0.315	0.598	0.569	.805**	0.428	.658*	1	0.353	0.435	0.435	0.042	0.217	0.088
ROCE	.788*	1	.837**	0.478	0.218	0.048	0.197	0.442	1	.959**	-0.225	0.297	0.208	0.352
REA	.868*	.936**	1	0.344	0.584	0.429	0.594	.664*	.909**	1	-0.107	0.373	0.308	0.412
PAT	.882*	.769**	.753*	1	0.411	0.108	0.305	0.577	0.312	0.291	1	0.138	-0.203	-0.078
CTCL	.699*	.721*	.879**	0.606	1	.638*	.878**	.639*	0.369	0.569	0.573	1	0.201	0.421
CR	0.093	0.301	0.442	0.042	.766**	1	.921**	0.025	-0.183	-0.057	0.021	0.129	1	.870**
QR	0.108	0.327	0.46	0.062	.774**	.997**	1	0.62	0.424	0.599	0.606	.938**	0.392	1
	2012/2013							2014/2015						
EPS	1	0.423	0.514	.765**	.799**	.644*	0.629	1	0.51	0.471	0.543	.661*	.728*	.684*
ROCE	0.382	1	.968**	0.567	0.419	0.544	0.498	0.588	1	.991**	0.359	0.174	0.31	0.265
REA	0.532	.942**	1	0.61	0.531	.658*	0.611	0.588	.990**	1	0.254	0.179	0.309	0.266
PAT	.833*	0.456	0.558	1	.717*	0.591	0.566	0.589	.633*	0.554	1	0.448	0.484	0.447
CTCL	.846*	0.361	0.499	.759*	1	.893**	.893**	-0.631	-0.027	-0.026	-0.281	1	.985**	.985**
CR	.665*	0.381	0.576	0.6	.793**	1	.997**	-0.451	0.173	0.144	-0.102	.847**	1	.993**
QR	.771*	0.409	0.549	.683*	.963**	.877**	1	-0.472	0.073	0.061	-0.197	.804**	.966**	1
	2016/2017							whole Period						
EPS	1	.650*	0.613	0.507	0.615	0.617	0.43	1						
ROCE	0.551	1	.975**	0.577	0.575	.672*	0.583	.481**	1					
REA	0.496	.977**	1	0.418	0.593	.724*	.640*	.493**	.969**	1				
PAT	0.412	.832**	.712*	1	0.355	0.343	0.237	.596**	.557**	.489**	1			
CTCL	0.03	0.445	0.592	0.156	1	.768**	.751*	.482**	.319**	.387**	.445**	1		
CR	0.08	0.55	.691*	0.224	.961**	1	.918**	.224*	.294**	.362**	.214*	.713**	1	
QR	0.04	0.511	.656*	0.187	.979**	.990**	1	.240*	.306**	.368**	.232*	.774**	.951**	1

Notes: "Earnings per share (EPS), Return on capital employed (ROCE), Return on assets (ROA), Profit after tax (PAT), Cash ratio (CASHR), Current ratio (CR), Quick ratio (QR)".

4.3 Regression analysis

The linear regression model is used to examine the impact of liquidity of the profitability of Indian manufacturing firms. The results in Table 4 shows the fitness of earnings per share model which is used for finding out the impact of liquidity on the earnings per share of Indian manufacturing firms. The table reveals that R square is 0.278 and the adjusted R square is 0.255, which means that cash to current liabilities, current ratio and quick ratio explain 0.255 of the changes in earnings per share of Indian manufacturing firms and the remaining is explained by other variables which are not included in this study. These results mean that the regression model is a perfect fit at predicting the outcomes. The results in table 4 shows that the cash to current liabilities ratio has a positive and significant impact on earnings per share of Indian manufacturing firms. On the contrary, current ratio and quick ratio have an insignificant impact on the profitability of Indian manufacturing firms.

Regarding the impact of liquidity measures on return on capital employed of Indian financial firms, table 4 reveals that the return on capital employed model is a perfect fit. R square is 0.111 and the adjusted R square is 0.084, which implies that the cash to current liabilities, current ratio and quick ratio explain 0.084 of changes in the return on capital employed of Indian manufacturing firms and the remaining is explained by other variables which are not included in this study. Further, the results in model 4 shows that the cash to current liabilities, current ratio and quick ratio have insignificant impact on return on capital employed of Indian manufacturing firms.

In case of the return on assets model, the results in Table 4 demonstrates the fitness of return on assets model which is used for finding out the impact of liquidity on the return on assets of Indian manufacturing firms. The table reveals that R square is 0.165 and the adjusted R square is 0.139, which means that the cash to current liabilities, current ratio and quick ratio explain 0.139 of the changes in return on assets of Indian manufacturing firms and the remaining is explained by other variables which are not included in this study. Moreover, the results showed that the cash to current liabilities, current ratio positively and insignificantly impact return on assets of Indian manufacturing firms. In the same vein, the quick ratio negatively and insignificantly impact return on assets of Indian manufacturing firms.

Regarding the impact of liquidity measures on profit after tax of Indian financial firms, table 4 reveals that profit after tax model is a perfect fit. R square is 0.231 and the adjusted R square is 0.207, which imply that the cash to current liabilities, current ratio and quick ratio explain 0.207 of changes in profit after tax of Indian manufacturing firms and the remaining is explained by other variables which are not included in this study. Furthermore, the results in model 4 shows that cash to current liabilities have a positive and significant impact on profit after tax of Indian manufacturing firms. On the other hand, current ratio and quick ratio have insignificant impact on profit after tax of Indian manufacturing firms. The findings of this study contradict those of Al-homaidi et al. (2020), Farhan et al. (2019) and Megaladevi (2018) who found out that there is a significant relationship between firm liquidity and financial performance of Indian listed firm.

Table 4. Regression analysis

Earnings per share is the dependent variable					Return on capital employed is the dependent variable				
	Unstandardized Coefficients					Unstandardized Coefficients			
	B	Std. Error	t	Sig.		B	Std. Error	t	Sig.
(Constant)	12.810	4.430	2.892	.005	(Constant)	4.659	2.173	2.144	.035
Cash to current Liabilities	14.648	2.706	5.414	.000	Cash to current liabilities	1.823	1.327	1.374	.173
Current ratio	1.510	3.098	.487	.627	Current ratio	.400	1.519	.264	.793
Quick ratio	-5.326	3.556	-1.498	.137	Quick ratio	.327	1.744	.187	.852
R Square		.278			R Square		.111		
Adjusted R Square		.255			Adjusted R Square		.084		
prob		.000			prob		.010		
Return on assets is the dependent variable					Profit after tax is the dependent variable				
	Unstandardized Coefficients					Unstandardized Coefficients			
	B	Std. Error	t	Sig.		B	Std. Error	t	Sig.
(Constant)	1.603	1.727	.928	.356	(Constant)	172.964	238.416	.725	.470
Cash to current Liabilities	1.899	1.055	1.800	.075	Cash to current Liabilities	682.987	145.612	4.690	.000
Current ratio	.768	1.208	.636	.527	Current ratio	54.444	166.717	.327	.745
Quick ratio	-.093	1.386	-.067	.947	Quick ratio	-222.155	191.374	-1.161	.249
R Square		.165			R Square		.231		
Adjusted R Square		.139			Adjusted R Square		.207		
prob		.001			prob		.000		

5. Conclusion

The main aim of this research paper was to examine the trade of between liquidity and profitability of Indian manufacturing firms. The target population of the study is manufacturing firms. The study used convenience sampling for collecting the data. The study is based on secondary data for the period from 2008 to 2017. 20 Indian manufacturing firms are selected which their data are available for the full study period. SPSS software is used for analyzing the data. Cash to current liabilities ratio has a positive and significant impact on earnings per share and profit after tax and insignificant impact on return on capital employed and return on assets. Current ratio and quick ratio have insignificant impact on earnings per share, return on capital employed, return on assets and profit after tax.

Researchers believe that there are only few studies that are conducted to examine the trade of between liquidity and profitability. Further, these studies were conducted long back. Therefore, this study is going to provide updated evidence on the trade of between liquidity and profitability of Indian manufacturing firms which has been neglected by researchers. Thus, the current study provides an intriguing glimpse into the factors influencing listed firms' profitability in India. In India, only a few empirical studies have been conducted on this topic. Hence, this study attempts to fill a void in the body of literature on the profitability of firms in India.

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