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Ahangar, Nufazil, "Working capital efficiency and firm profitability: Narrative literature review" (2020).
Library Philosophy and Practice (e-journal). 3811.
<https://digitalcommons.unl.edu/libphilprac/3811>

Working capital efficiency and firm profitability: Narrative literature review

Abstract

The purpose of this paper is to review research on working capital efficiency and firm profitability and suggest agenda for future research. Using narrative literature review method, the present study reviews 339 journal articles. Detailed narrative review reveals that working capital efficiency and firm profitability phenomenon reveals that results are equivocal.

Keywords: Cash conversion cycle, Accounts payable period, Accounts receivable period, Firm performance, Narrative Literature review, Working capital management

Paper type: Literature review

1. Introduction

A corporate finance manager frames capital structure, dividend and working capital management (WCM) policies of an enterprise (Moles et al., 2011). While the capital structure and dividend policy decisions relate to financing and investing of long-term capital, WCM decisions relate to investing and financing of short-term capital that holds a significant proportion on a company's balance sheet (Supatanakornkij, 2015). The pioneering study by Smith (1980) suggests that managing working capital is imperative because it affects the profitability and risk of exposure a firm and ultimately the value of the firm. Historically, management of working capital as a concept evolved from the static view to the dynamic one. Static view considered working capital as a liquidity measure of a firm that remains constant over the specified period of time. This view measured working capital as the excess of current assets over current liabilities and did not consider the cyclicity of working capital. Later on, finance theorists and researchers integrated the concept of cyclicity with working capital and accordingly, dynamic view of working capital came to fore. Dynamic view of working capital considers working capital as a moving or revolving capital and accordingly quantifies progressing liquidity of the firm rather than the liquidity at a given point in time. The dynamic view of working capital lays emphasis on turnover i.e. the number of days required by the firm to change a rupee of cash outflow into a rupee of cash inflow from an enterprises standard course of operations. And the best proxy form measuring working capital turnover of a firm is cash conversion cycle (CCC). CCC is actually the conduit of 'accounts receivables period (ARP)', 'accounts payable period (APP)' and 'inventory conversion period' (ICP); expressed in the formulae, $CCC = ARP + ICP - APP$.

Broadly speaking, the literature on working capital turnover efficiency on firm profitability is divided into two camps; one that argues that longer CCC improves firm profitability and another that asserts that smaller CCC improves firm profitability. Arguably a larger CCC increases the sales of a firm and also its profits for a number of reasons. First, larger CCC results in carrying larger inventories that prevents production interruptions, reduces supply costs, controls price fluctuations and loss in business due to unavailability of products (Ukaegbu, 2014; Gill et al., 2010; Afza and Nazir, 2007; Deloof, 2003). Second, increasing CCC releases more funds that helps a firm to extend trade credit and thus enhance sales. Extending trade credit gives ample time to customers to check the quality and quantity before paying (Gill et al., 2010; Deloof, 2003). Further, extending trade credit builds the confidence among the customers thus forging a long-term relationship with them (Singhania et al., 2014; Ukaegbu, 2014; Deloof, 2003). From the accounts payable perspective, a company with larger CCC may pay quickly to their suppliers and thus enjoy early payment discount (Singhania et al., 2014; Sharma and Kumar, 2011; Wilner, 2000; Ng et al., 1999). Contrary to this, maintaining a high level of working capital requires additional finances which might raise the

opportunity cost if the firm forgoes other productive investments. It may also raise financial expenses since new finances are not free of cost. Some even assert that maintaining longer CCC may be the reason for firm's bankruptcy (Soenen, 1993) and some suggest that maintaining higher levels of working capital may increase the probability of a firm going bankrupt (Kieschnick et al., 2011). Keeping in view the arguments and counter arguments, investigating the relationship between working capital efficiency and firm performance in the present study researcher conduct narrative literature review on the topic working capital efficiency and firm performance. In this manner, the objectives of the study are to:

- synthesize the existing literature on working capital efficiency and firm performance
- classify and explore the issues on working capital efficiency and firm performance suggested by published research articles.
- suggest a research agenda for future work.

2. Methodology of narrative literature review

For the purpose of this paper, we use narrative literature review methodology. Therefore, in this paper, we conducted a search for published journal articles on WCM across databases to collect a range of published articles for narrative review. We use Emerald, Sage, Science direct, Scopus and EBSCO bibliographic databases for searching articles. We used a keyword search to identify articles to be taken for narrative literature review. We collected articles published on working capital for a period of (1990-2018). Further, we used systematic deletion process to eliminate duplicate articles that were part of two databases, for example Scopus and Science direct. Further, we eliminated articles that did not had full-text available, leaving us with a total of 339 articles for conducting narrative literature review. Table I provides the details of database search.

Table I: Database search			
Database	Time period	Total number of articles matching keywords	Total articles selected
Emerald	1990-2018	104	56
Sage	1990-2018	23	6
Science direct	1990-2018	112	82
Scopus	1990-2018	214	103
EBSCO	1990-2018	201	92
Total		654	339

3. Narrative review

3.1. Working capital efficiency and firm profitability

Every business organization, irrespective of size and nature, ought to have working capital for the smooth running of the business. Effective WCM aims at maintaining the liquidity so that the business is able to meet its day to day obligations (Eljelly, 2004). Maintaining the desired level of working capital turnover is not an easy task because components of working capital

keep on circulating. In case a firm is not able to maintain the desired level of working capital then it would have an impact on the firm's profitability⁴.

3.1.1. Cash conversion cycle and firm profitability

Most of the empirical studies have adopted cash conversion cycle (CCC) as a measure to assess the efficiency of working capital of a firm (see for example, Bhatia and Srivastava, 2016; Tahir and Anuar, 2016; Pais and Gama, 2015; Singhania et al., 2014; Baños-Caballero et al., 2012; Sharma and Kumar, 2011; among others). CCC measures the time lag between the expenditure on purchase of raw materials and the collection of sales from finished goods. Prior literature suggests that the length of CCC determines the profitability of firms and accordingly a firm may either have a longer CCC or a shorter CCC (Banos-Caballero et al., 2010). Research has found various plausible reasons to the phenomenon that longer CCC might increase profitability through enhanced sales (Deloof, 2003), give customers more time to differentiate between products (Deloof and Jegers, 1996), reduce the information asymmetry between buyer and seller (Smith, 1987), prevent production interruptions (Ng et al., 1999), and strengthen long-term buyer-seller relationships (Wilner, 2000). The literature on WCM has amplified that customers feel discouraged when a supplier uses aggressive WCM strategy to patronize its products. This is because extending trade credit reflects the reputation and financial health of the firm (Peel et al., 2000). Extended CCC is a convincing factor that a company's products offer value for money (Blazenko and Vandezande, 2003; Deloof and Jegers, 1996). Likewise, collecting receivables quickly and selling on immediate cash basis proves a determinant in patronizing company's products. In addition, it involves other negative effects like high transaction cost of converting receivables back into cash (Kim and Atkins, 1978), default risk (Shi and Zhang, 2010). Similarly, stocking more inventories gives customers more choice and variety of products to choose from. In addition, stocking more inventories means that there would be no unmet demand for the product which again improves profitability. In a similar vein, a recent work by Martinez-Sola et al (2007) also suggests that by relaxing the credit period, firms can improve their profitability because they are able to reduce the accumulation of inventories and thus storage costs. The positive impact of CCC on firm profitability has been corroborated by a number of other empirical studies (see for example, Bhunia and Das, 2015; Chaklader and Shrivastava, 2013). Contrary to the view that longer CCC has a positive impact on firm profitability, numerous reasons are put forward to suggest that shorter CCC increases firm profitability. Firms with shorter CCC can increase profitability because they are able to generate internal funds which reduces the dependence on external funds that are generally expensive (Banos-Caballero et al., 2013). In addition, utilization of internally generated funds results in lower cost of capital and thus improves profit margins (Luo et al., 2009). In a similar vein, Autukaite and Molay (2011), suggest that by reducing CCC, firms lower down financial cost and thus enjoy financial flexibility. Researchers further suggest that with an improvement in financial flexibility, firms can improve their risk profile and accordingly be in a better position to attract cheap finance from external sources. A shorter CCC also indicates the efficiency of the firm in utilizing its working capital. It demonstrates the quickness of a firm in converting inventory into sales and also the quickness in recovering receipts from debtors while slowing down the disbursement of cash (Nobanee, 2009). This argument is in line with that of Garcia-Teruel and MartinezSolano (2007) who suggest that by reducing CCC, a firm can increase the cash flow reserves. Reporting a negative relationship between CCC and firm profitability, Deloof (2003) asserts that more profitable companies pay their bills faster. With faster payments, companies are able to enjoy the discounts offered by the suppliers. The researcher further opines that managers can create value for their shareholders by reducing the number of days of accounts receivable and inventories to a reasonable minimum. There are numerous other studies that support this view (see for example, Bhatia and Srivastava, 2016; Lyngstadaas and Berg, 2016; Pais and Gama,

2015; Babu and Chalam, 2014; Enqvist et al., 2014; Singhania et al., 2014; Banos-Caballero et al., 2014; Ramachandran and Janakiraman, 2009; Garcia-Teruel and Martinez Solano, 2007; Raheman and Nasr, 2007; Lazaridis and Tryfonidis, 2006 among others).

Table II summarises some important empirical works with regard to investigation of empirical studies conducted on working capital efficiency and firm profitability.

Table II: Empirical studies conducted on working capital efficiency and firm profitability					
Author(s) Year	Country	Sample Size	Time period	Variables studied	Finding (Relationship)
Bhatia and Srivastava (2016)	India	179 firms	13 years	Gross operating income (Tobin's Q) Cash Conversion Cycle Accounts receivable days Inventory days Accounts payable days Firm size Sales growth Leverage Fixed financial assets Growth in gross domestic products	- - - + + + - + +
Lyngstadaas and Berg (2016)	Norway	240,000 firms	4 years	Return on assets Cash conversion cycle Number of days inventory Accounts receivable days Accounts payable days Firm size Sales growth Debt ratio Annual GDP growth Current assets ratio Current liabilities ratio	- - - - + + - + + +
Pais and Gama (2015)	Portugal	6063 firms	8 years	Return on assets Cash conversion cycle Days accounts receivable Number of days accounts payable Number of days of inventory Size of the firm Growth in sales Leverage Current assets ratio Growth in gross domestic product	- - - - - - + + + - -
Bhunja and Das (2015)	India	140 firms	10 years	Return on capital employed Working capital cycle Stock turnover ratio Debtors turnover ratio Creditor's turnover ratio Current ratio Quick ratio Cash position ratio Debt equity ratio	+ - + + Non-sig Non-sig Non-sig Non-sig
Babu and Chalam, (2014)	India	Industry aggregates of leather industry	14 years	Return on assets Cash conversion cycle Inventory conversion Average collection period Average payment period	- + + -

Banos-Caballero et al. (2014)	UK	258 firms	7 years	Tobin's Q Net trade cycle Leverage ratio Firm size Sales growth	- + Non-sig +
Enqvist et al (2014)	Finland	1136 firm-year observations	19 years	Return on assets Gross operating ratio Cash conversion cycle Number of Days Account Receivable Number of Days Inventory Number of Days Account Payable Current Ratio	- - - - + Non-sig -
Singhanian et al.(2014)	India	82 firms	8 years	Gross operating profit Cash conversion cycle Receivables collection period Payment deferral period Inventory conversion period Sales growth Size of the firm Current ratio Debt ratio	- + Non-sig + - - - +
Chaklader and Shrivastava (2013)	India	169 firms	3 years	Return on Assets Cash conversion cycle Average collection days Inventory turnover period Average payment days Current assets to total assets	Non-sig + - + +
Abuzayed (2012)	Jordan	52 firms	9 years	Gross operating income Cash conversion cycle Accounts payable period Accounts collection period Inventory conversion period Current ratio Debt ratio Firm size	+ - + + + + +
Sharma and Kumar (2011)	India	263 firms	9 years	Return on assets Cash conversion cycle Number of days accounts receivables Number of days inventory Number of days accounts payable Firm size Sales growth Leverage Current ratio	Non-sig + Non-sig Non-sig - - - + +
Vijayakumar (2011)	India	26 firms	12 years	Gross profit Cash conversion cycle Accounts Receivables Period Inventory Conversion Period Accounts Payable Period Firm size Sales growth Leverage	- - - + + + - +
Raheman et al (2010)	Pakistan	204 firms	10 years	Net Operating Profitability Cash Conversion Cycle Net Trading Cycle	- -

				Average Collection Period Inventory Turnover in Days Average Payment Period Gross Working Capital Turnover Current Assets to Total Assets Ratio Current Liabilities to Total Assets Ratio Financial Debt Ratio Size of firm Sales Growth Current Ratio	Non-sig - Non-sig + + - - + + + +
Ramachandran and Janakiraman (2009)	India	60 firms	10 years	Earnings before interest and tax Cash conversion cycle Accounts Payable Days Accounts Receivables Days Inventory Days Fixed Financial Assets Ratio Financial Debt Ratio Size	- + + - - + +
Garcia-Teruel and Martinez Solano (2007)	Spain	38,464 firm-year Observations.		Return on assets Cash conversion cycle Number of days accounts receivable Number of days of inventory Number of days accounts payable Size of the firm Sales growth	- - - - + + - -
Raheman and Nasr (2007)	Pakistan	94 firms	6 years	Net Operating Profit Cash Conversion Cycle Average Collection Period Inventory turnover in days Average Payment Period Current Ratio Size Leverage Financial assets to total assets	- - - - - + - -
Lazaridis and Tryfonidis (2006)	Greece	131 firms	5 Years	Gross Operating Profit Cash Conversion Cycle Number of Days accounts receivable Number of Days Inventory Number of Days accounts payable Company size	- - Non-sig + + +
Deloof (2003)	Belgium	1,009 firms	5 years	Gross operating income Cash conversion cycle Number of days accounts receivable Number of days inventories Number of days accounts payable Firm size Sales growth	- - - - + +

3.1.2. Accounts payable period and firm profitability

Under credit transactions, the amount of money that a recipient of goods promises to pay to the supplier is referred to as accounts payable. Accounts payable is one of the major sources of unsecured short term external finance for a firm (GarciaTeruel and Martinez-Solano, 2010; Altaf and Shah 2018a; Wilner, 2000). Studies suggest that efficient management of accounts payable is imperative for ensuring cordial relations with suppliers. Such relationships help in building trust and ensure a constant supply of inventories (Helfert, 2003). Further, the existence of market imperfections force a firm to have an optimal accounts payable policy in place (Marinez-Sola et al., 2010). The most comprehensive measure for assessing the efficiency of accounts payable in a firm is accounts payable period (APP). This ratio measures the time lag between the supply of goods to the firm and the payment made for it. In other words, it measures the number of days a company takes to pay to its suppliers. Existing literature has found either a positive or a negative relationship of APP with firm profitability. The type of relationship between APP and firm profitability has been mostly attributed to the length of APP. One set of studies asserts that longer APP helps to improve firm profitability because delaying payment to suppliers reduces the transactional costs and exchange costs (Altaf and Shah, 2018b; Mathuva, 2014; Bhattacharya, 2014; Banerjee et al., 2007). Transaction cost theory of trade credit argues that longer APP allows a company to accumulate the owing amounts and pay them as per the periodic credit agreement. This helps a firm to overcome the financial constraints and improve profitability (Altaf and Shah, 2019; Pike and Cheng, 2001). Another perspective comes from financial distress theory that argues that a supplier in financial distress is forced to offer more trade credit due to the weak bargaining position (Wilner 2000; Bhattacharya 2014). In addition, these financially constrained firms are desperate for sales since they cannot afford the costs associated with holding inventories. Taking advantage of this weakness, customers of a financially distressed firm not only ask for more trade credit but also demand discounts and other concessions (Bhattacharya 2014). A study by Boissay and Gropp (2007) concludes that firms tend to handle liquidity shocks by adopting longer APP and tend to pass one-fourth of their shock to their suppliers. In addition, Nilsen (2002) suggests that during the economic downturn, when funds from a financial institution are unavailable, firms tend to substitute trade credit for finance from financial institutions. Thus, trade credit is used as a source of *'financing of last resort'* during economic slowdowns (Petersen and Rajan, 1997). Studies by Bougheas et al. (2009) and Ferrando and Mulier (2013) through a model demonstrated that a longer APP works as a substitute to finance production in an economy without bank loans. This phenomenon was further corroborated by Fisman and Love (2003) who analyzed the substitutability of accounts payable for institutional financing. Findings of this study suggest that in countries with less developed financial markets, those industries tend to grow faster that have longer payment cycles. Findings also suggest that in such markets suppliers' finance is used to secure loans from banks by utilizing the same as collaterals (Miwa and Ramseyer, 2005).

The financial theory of trade credit further asserts that due to inefficiencies in financial markets, companies tend to ignore financial institutions and accept trade credit from suppliers. Moreover because of these market inefficiencies, all the companies do not have equal access to credit from financial institutions. Under such situations, firms with less access to financial markets are more or less completely dependent on the supplier's credit. Besides, the financial theory argues that firms with better access to financial markets act as intermediaries that borrow from

financial institutions and supply it to customers in the form of trade credit (Garcia-Teruel and Martinez-Solano 2010a). Thus, as per the financial theory, the amount of credit that a firm can grant to its customers is somehow dependent on its accessibility to the financial market. Besides, it is argued that delaying payment helps in managing the quality of products bought (Raheman et al., 2010) that tends to remove the information opacity between buyer and sellers (Pike et al., 2005; Smith, 1987), signals product quality (Bastos and Pindado (2007), minimizes the time and efforts on cash refunds (Garcia-Teruel and Martinez-Solano, 2010a). In tune with these findings, a number of studies found a positive relationship between APP and firm profitability (see for example, Bhatia and Srivastava, 2016; Bhunia and Das, 2015; Singhania et al., 2014; Chaklader and Shrivastava, 2013; Vijayakumar, 2011 among others). Contending the above findings, some studies suggest that longer APP reduces firm profitability because increase in accounts payable results in costly credit management activities (Mian and Smith, 1992); increases the credit management cost of the buyer in the shape of additional administrative costs (Garcia-Teruel and Martinez-Solano, 2010a; Bougheas et al., 2009; Cheng and Pike, 2003). This assertion is consistent with the credit risk theory which holds that credit risk of debt defaults for a firm increases as it tends to over-invest in accounts payable (Cheng and Pike, 2003). In addition, it increases the costs of the firm due to the high cost of investment in current assets (Garcia-Teruel and Martinez-Solano, 2010). Moreover, the discounting theory suggests that firms that wait longer to settle their supplies tend to lose discounts for early payment. These cash discounts sometimes turn out to be substantial that may have an effect on corporate profitability (Deloof and Jegers, 1996, Ng et al., 1999). In support of these arguments, a number of studies have found a negative relationship between APP and firm profitability (see for example, Lyngstadaas and Berg, 2016; Pais and Gama 2015; Garcia-Teruel and Martinez-Solano, 2007; Deloof, 2003 among others).

3.1.3. Accounts receivable period and firm profitability

Generally, trade credit implies supplying of goods and services by a supplier on a deferred payment basis. The financing theory suggests that a supplier while offering trade credit in the shape of credit sales takes the position of the financial institution. This theory regards trade credit as a perfect substitute of credit granted by financial institutions (Bhattacharya 2014). In other words, trade credit refers to a situation where a supplier sells its products now but receives the payment in a future period of time. Accordingly, trade credit gives customers time to pay with a time gap between the delivery of goods and payment for them (Garcia-Teruel and Martinez-Solano, 2010; Peel et al., 2000). This time lag between the sale and actual realization of cash tends to create receivables that are to be collected by a firm over a period of time (Fabozzi and Peterson, 2003). The time period required to convert the receivables back into cash or to collect cash from customers is technically known as accounts receivable period (ARP) or accounts collection period (Mathuva, 2014). Accounts receivable or simply receivables can thus be seen as short-term loan to customers given by the supplying firm that is to be returned within the specified period of time (Martinez-Sola et al., 2013; Danielson and Scott, 2004; Jain, 2001). The literature on WCM amply demonstrates that the success of a business depends heavily on the financial executives' ability to effectively manage receivables (Taurangana and Afrifa, 2013; Filbeck and Krueger, 2005). Research has also shown that accounts receivable period has a significant impact on firm profitability (see for example, Bhatia and Srivastava, 2016; Ukaegbu, 2014; Banos-Caballero et al., 2013; Rehman and Nasr, 2007; Deloof, 2003 among others). Available literature on WCM generally signifies that the

nature of the relationship between accounts receivables period and firm profitability generally depends on the length of accounts receivable period adopted by a firm. (Baños-Caballero et al., 2016; Tauringana and Afrifa, 2013). However, literature asserts that firms can have a long or short receivables conversion period (Temtime, 2016; Kavitha and Shanmugam, 2014; Mwangi et al., 2014). Quality guarantee theory of trade credit suggests that adoption of longer receivables period by firm results in the increase of investment in working capital. This theory further argues that extending the receivables period gives customers enough time to verify the quality of goods before paying. This tends to reduce the opacity of information between the buyer and seller (Smith, 1987). Thus, it is only the product quality guarantee that fosters the reduction of information asymmetries between buyer and seller by allowing the customer to fully verify the goods and be satisfied before making any payment. Further, reduction of information asymmetries between buyer and seller eliminates future contentions relating to the goods because customers are given ample time to assess the quality before any payments are made. Giving customers an opportunity to verify the goods before making any payment boosts the trust of customers in the firm. Such confidence may, in turn, result in good reputation of the firm in the market. Besides, the financing theory suggests that suppliers who grant trade-credit are in better position to monitor customers than any financial institution because of frequent trade transactions. Further, financing theory suggests that an increase in accounts receivable period tends to increase the control over the customers because supplier can threaten to cut-off the supplier, in case customers make default in payment. However, this control tends to be more effective when there are only a few suppliers in the market (Garcia-Teruel and MartinezSolano, 2010a) and the supplier is the part of a group that can make sanctions on the customers (McMillan and Woodruff, 1999). The rationale for extending trade-credit to its customers is also supported by product differentiation theory of trade credit. According to this theory, accounts receivable can be used, like other tools of promotion, to increase sales and also to differentiate the product of the firm from that of its rivals. Another argument of product differentiation theory is that companies tend to see trade credit as an investment in customers. This investment tends to generate a bunch of loyal customers that have future benefits in the form of improved profitability because of guaranteed future sales to loyal customers. Thus, unlike other sales promotion tools, trade credit may not improve sales immediately but may help to generate more sales in the future period of time. This perspective has received considerable support from certain empirical studies that found a positive relationship between ARP and firm profitability (see for example, Bhunia and Das, 2015; Babu and Chalam, 2014; Chaklader and Shrivastava, 2013; Abuzayed, 2012 among others).

Contrary to the above, investing less in accounts receivable results in the reduction of the receivables period that increases the availability of cash to the company. This cash acts as a buffer especially when a firm is running short of cash to pay off its obligations and thus potentially reducing financial distress which ultimately increases profitability. Further, availability of cash reduces the chances of bankruptcy because a company is better equipped to pay off its obligations in time. This perspective is consistent with the financial distress theory. Moreover, increase in profitability due to the reduction of receivables period is also supported by transactional cost theory of trade credit. This theory holds that buyer and seller can agree to the periodic payment schedule that tends to reduce the transaction costs (Ferris, 1981). By agreeing to the periodical payment schedule, a firm is able to separate the purchase and payment cycle. Such separation of payments from purchase cycle, alongside agreeing to a fixed payment period, helps a firm to plan and manage its financial resources with greater

certainty (Schwartz 1974). In addition, separation of payment from delivery reduces the monetary theft risk and, therefore, tends to increase profitability (Stowe and Gehr, 1985). In support of these arguments, a number of studies have shown a negative impact of ARP and firm profitability (see for example, Bhatia and Srivastava, 2016; Pais and Gama, 2015; Vijayakumar, 2011 among others)

3.1.4. Inventory conversion period and firm profitability

Inventories represent the stock of goods procured or manufactured for sale. In case of manufacturing enterprises, inventories consist of about 20 to 30 percent of the total investment and represent the largest cost for a manufacturing enterprise (Kung'u, 2015; Garcia – Teruel and Martinez, 2007). Available literature suggests that under perfect market conditions, firms tend to maintain lower investment in inventories as they generally have accurate information about the demand conditions. However, under imperfect market conditions, firms are forced to maintain huge investments in inventories in order to safeguard against eventualities like nonavailability of raw material goods, demand rise etc. (Mathuva, 2014; Koumanakos, 2008). The volume of inventories held by an organization has a significant impact on its sales and ultimately the profitability (Ching et al., 2011; Gill et al., 2010; Koumanakos, 2008). However, the volume of inventories to hold depends upon the amount of financial and other resources, technology, expertise etc. (Tingbani, 2015). One of the widely used tools for evaluating the efficiency of inventory management is inventory turnover ratio (ITR) (Lyngstadaas and Berg, 2016; Singhania et al., 2014; Subramanyam and Wild, 2009). Put simply, this ratio measures the time taken by a company to sell and replace entire inventory batch or, in other words, the average rate at which inventories move in and out of a company (Subramanyam and Wild, 2009).

A firm may adopt either a longer or a shorter ITR. A firm adopting shorter ITR maintains lower investment in inventory, thus minimizes the holding, obsolescence, insurance costs. However, this approach may result in the loss of sales if inventories are held below the optimal level. Conversely, a firm can adopt a longer ITR with huge investments in inventories. This approach helps a firm to meet all the demand in the market. But maintaining higher investments exposes a firm to a number of costs like obsolescence, storage, physical deterioration, pilferage etc. In addition, excessive investment in inventories keeps the funds tied up that could be used elsewhere. (Nazir and Afza, 2009; Garcia-Teruel and Martinez-Solano, 2007). Thus, inventory management quality has a significant impact on the profitability of a firm. Earlier work by Nazir and Afza (2009) suggests that reduction in inventory or adoption of shorter inventory cycle may increase the profitability of a firm. This increase in profitability is attributed to the reduction in variable costs associated with the holding of inventory. Theoretically, this argument is justified by Just-In-Time (JIT) theory of inventory management which asserts that holding of inventory is just a waste or at least does not add value to the firm (Bhattacharya, 2014). Further, the theory suggests that firms should hold zero inventory levels and order for materials only when they are needed. This avoids the cost of holding inventories, thus allowing firms to enjoy higher profitability. Recent works (see for example, Filippini and Forza, 2016; Singh and Ahuja, 2014) empirically validated the successful implementation of JIT and demonstrated how some companies could reduce costs and increase profitability after implementation of JIT inventory system. Moreover, Younies et al. (2007) assert that JIT system can be successfully implemented by developing a strong buyer-supplier relationship. Nevertheless, a number of researchers have documented the presence of negative relationship

between ITR and firm profitability (see for example, Babu and Chalam, 2014; Abuzayed, 2012). Contrarily, a firm can adopt the longer ITR by making additional investments in inventories in order to augment profitability by increased sales (Deloof, 2003). The theoretical justification of this phenomenon is embedded in the precautionary motive theory, speculative motive theory and transaction motive theory of holding inventories. Firstly, the precautionary motive theory asserts that firms must hold inventories as a precaution against stockouts (Wen, 2003). This theory predicts that because of uncertainty in the lead-time of delivery, firms can enhance profitability by increasing investment in inventories (Modigliani, 1957). This notion was upheld by empirical studies of Gill et al., (2010); Bhattacharya, (2014); Wen, (2003) who opined that by holding an additional investment in inventories, firms can enhance their profitability. Drawing inferences from a sample of American firms, Gill et al., (2010) suggested that high level of inventories reduced production and trading interruptions that further contributed to the profit maximization of a firm. In a similar vein, Bhattacharya (2014), suggested that stockouts not only deteriorated the name of the firm but also drove the customers to other competitors. Speculative motive theory suggests that firms maintain additional investment in inventories with the expectation of benefiting from price rise in the future and thus, gain future abnormal profits (Christiano and Fitzgerald, 1989). It is further argued that certain companies hoard their inventories in anticipation of a rise in price in future and thus tend to make abnormal profits. In addition, the cost of holding inventories is often compensated by the rise in price (Tingbani, 2015). This phenomenon is supported by a number of empirical studies (see for example, Tingbani, 2015; Blazenko and Vandezande, 2003; Hill and Sartoris, 1992 among others). Hill and Sartoris (1992) suggest that inflationary conditions make hoarding inventories most effective. Blazenko and Vandezande (2003) also found that firms are more inclined towards hoarding inventories in anticipation of abnormal profits. Lastly, the transactional cost motive of holding inventory asserts that a firm maintains higher inventories because of benefits arising out of bulk purchases. Bulk purchases reduce the cost of procurement like the fixed cost of ordering and processing orders. Further, bulk purchases also reduce the transportation costs and allow a company to take advantage of quantity discounts (Taurangana and Afrifa, 2013). Alternatively, Bhattacharya (2014), suggests that companies stock inventories for the purpose of demonstration and display, as customers prefer to examine the product before actually buying. Many studies (see for example, Taurangana and Afrifa, 2013; Padachi, 2006; Nobanee, 2009, Bhattacharya, 2014) empirically support these arguments. Thus, research has found that a shorter ITR has a negative impact on profitability.

4. Conclusions and directions for future research

A critical analysis of the empirical research reviewed above reveals that the literature with regard to WCM has largely remained focussed on investigating the impact of CCC and its components on firm profitability in developed as well as developing countries including India (see for example, Singhania and Mehta, 2017; Lyngstadaas and Berg, 2016; Pais and Gama, 2015). The critical but exhaustive review of available literature on working capital management reveals that even though the researchers in the area have adequately researched WCM and its various components and dimensions some equally crucial aspects and measures of WCM have more or less remained evasive for them. *Inter-alia*, these include target CCC for firms, speed of adjustment towards target CCC and the determinants of CCC. Besides, the research has largely ignored other significant areas like working capital financing pattern and its impact on firm profitability and the impact of financial constraints on the relationship between CCC and firm profitability.

Accordingly, future research warrants a perennial and quality research especially on the dimensions unexplored hitherto and to overcome the limitations highlighted above. In addition, similar research studies can also be conducted in countries with varying economic conditions, institutional attributes, regulatory mechanisms and monetary frameworks. Moreover, due to the disparities in ownership structure, adaptability and charge, the financing alternatives and techniques are very different amongst small and large firms, future research on similar aspects across small and large firms under different institutional and monetary frameworks would be quite interesting. Some recent studies like Altaf and Shah (2017); Singhanian and Mehta (2017); Baños-Caballero et al. (2012) asserted that prior literature disregarded the risk that accrues because of the loss of demand and stoppage of production due to lower investment in working capital. These studies further suggested that firms must maintain an optimal level of investment in working capital and such optimal level can be found by examining the quadratic form of relationship between CCC and firm profitability. Dissecting the quadratic relationship between CCC and firm profitability would, therefore, be yet another agenda for future research. Research can also be carried out on establishing industry-specific measures for effective working capital management by adopting numerous contextual investigation strategies including case studies even if formulating such contextual investigations require an in-depth understanding of the organization and industry specific settings. These investigations shall, however, go a long way in building a robust theory of working capital that would strengthen the base for hypothesis development and testing in future.

References

- Abuzayed, B. (2012). Working capital management and firms' performance in emerging markets: the case of Jordan. *International Journal of Managerial Finance*, 8(2), 155-179.
- Afza, T., & Nazir, M. S. (2007). Is it better to be aggressive or conservative in managing working capital. *Journal of quality and technology management*, 3(2), 11-21.
- Altaf, N. and Ahmad, F. (2019), "Working capital financing, firm performance and financial constraints", *International Journal of Managerial Finance*, Vol. 15 No. 4, pp. 464-477.
- Altaf, N. and Shah, F.A. (2018a), "Investment and financial constraints in Indian firms: Does working capital smoothen fixed investment?", *Decision*, Vol. 45 No.1, pp.43-58.
- Altaf, N. and Shah, F.A. (2018b), "How does working capital management affect the profitability of Indian companies?", *Journal of Advances in Management Research*, Vol. 15 No. 3, pp. 347-366.
- Altaf, N., and Shah, F. (2017), "Working capital management, firm performance and financial constraints", *Asia-Pacific Journal of Business Administration*, Vol. 9 No. 3, pp. 206-219.
- Autukaite, R., & Molay, E. (2011). Cash holdings, working capital and firm value: Evidence from France. Available at https://papers.ssrn.com/sol3/papers.cfm?abstract_id=1836900.
(Accessed: 13 December 2018).

- Babu, N. S., & Chalam, G. V. (2014). Study on the Working Capital Management Efficiency in Indian Leather Industry-An Empirical Analysis. *International Journal of Research in Management & Technology (IJRMT)*, 4(5).
- Banerjee, S., Gatchev, V. A., & Spindt, P. A. (2007). Stock market liquidity and firm dividend policy. *Journal of Financial and Quantitative Analysis*, 42(2), 369-397.
- Baños-Caballero, S., García-Teruel, P. J., & Martínez-Solano, P. (2013). How does working capital management affect the profitability of Spanish SMEs?. *Small Business Economics*, 39(2), 517-529.
- Baños-Caballero, S., García-Teruel, P. J., & Martínez-Solano, P. (2014). Working capital management, corporate performance, and financial constraints. *Journal of Business Research*, 67(3), 332-338.
- Baños-Caballero, S., García-Teruel, P. J., & Martínez-Solano, P. (2010). Working capital management in SMEs. *Accounting & Finance*, 50(3), 511-527.
- Bastos, R., & Pindado, J. (2007). An agency model to explain trade credit policy and empirical evidence. *Applied Economics*, 39(20), 2631-2642.
- Bhatia, S., & Srivastava, A. (2016). Working Capital Management and Firm Performance in Emerging Economies: Evidence from India. *Management and Labour Studies*, 41(2), 71-87.
- Bhattacharya, H. (2014). *Working capital management: Strategies and techniques*. PHI Learning Pvt. Ltd..
- Bhunia, A., & Das, A. (2015). Underlying relationship between working capital management and profitability of pharmaceutical companies in India. *American Journal of Theoretical and Applied Business*, 1(1), 27-36.
- Blazenko, G. W., & Vandezande, K. (2003). Corporate holding of finished goods inventories. *Journal of Economics and Business*, 55(3), 255-266.
- Boissay, F., & Gropp, R. (2007). Trade credit defaults and liquidity provision by firms. Available at <https://www.econstor.eu/bitstream/10419/153187/1/ecbwp0753.pdf>. (Accessed: 10 January 2018).
- Bougheas, S., Mateut, S., & Mizen, P. (2009). Corporate trade credit and inventories: New evidence of a trade-off from accounts payable and receivable. *Journal of Banking & Finance*, 33(2), 300-307.

- Chaklader, B., & Shrivastava, N. (2013). Relationship of WCM with Firm's Profitability during the Period of Global Slowdown: An Empirical Study of Manufacturing Firms in India. *Research Journal of Economics and Business Studies*, 2(3), 41-50.
- Cheng, N. S., & Pike, R. (2003). The trade credit decision: evidence of UK firms. *Managerial and Decision Economics*, 24(6-7), 419-438.
- Ching, H. Y., Novazzi, A., & Gerab, F. (2011). Relationship between working capital management and profitability in Brazilian listed companies. *Journal of global business and economics*, 3(1), 74-86.
- Christiano, L. J., & Fitzgerald, T. J. (1989). *The magnitude of the speculative motive for holding inventories in a real business cycle model* (No. 10). Federal Reserve Bank of Minneapolis.
- Danielson, M. G., & Scott, J. A. (2004). Bank loan availability and trade credit demand. *Financial Review*, 39(4), 579-600.
- Deloof, M. (2003). Does working capital management affect profitability of Belgian firms?. *Journal of business finance & Accounting*, 30(3-4), 573-588.
- Deloof, M., & Jegers, M. (1996). Trade credit, product quality, and intragroup trade: some European evidence. *Financial management*, 33-43
- Eljelly, A. M. (2004). Liquidity-profitability tradeoff: An empirical investigation in an emerging market. *International journal of commerce and management*, 14(2), 48-61.
- Enqvist, J., Graham, M., & Nikkinen, J. (2014). The impact of working capital management on firm profitability in different business cycles: Evidence from Finland. *Research in International Business and Finance*, 32, 36-49.
- Fabozzi, F. J., & Peterson, P. P. (2003). *Financial management and analysis* (Vol. 132). John Wiley & Sons.
- Ferrando, A., & Mulier, K. (2013). Do firms use the trade credit channel to manage growth?. *Journal of Banking & Finance*, 37(8), 3035-3046.
- Ferris, J. S. (1981). A transactions theory of trade credit use. *The Quarterly Journal of Economics*, 96(2), 243-270.
- Filbeck, G., & Krueger, T. M. (2005). An analysis of working capital management results across industries. *American Journal of Business*, 20(2), 11-20.
- Filippini, R., & Forza, C. (2016). The Impact of the Just-in-Time Approach on Production System Performance: A Survey of Italian Industry. A Review and Outlook. In *A Journey*

through Manufacturing and Supply Chain Strategy Research (pp. 19-39). Springer International Publishing.

Fisman, R., & Love, I. (2003). Trade credit, financial intermediary development, and industry growth. *The Journal of finance*, 58(1), 353-374.

García-Teruel, P. J., & Martínez-Solano, P. (2010). A dynamic approach to accounts receivable: a study of Spanish SMEs. *European Financial Management*, 16(3), 400-421.

García-Teruel, P. J., & Martínez-Solano, P. (2010a). A dynamic perspective on the determinants of accounts payable. *Review of Quantitative Finance and Accounting*, 34(4), 439-457.

García-Teruel, P., & Martinez-Solano, P. (2007). Effects of working capital management on SME profitability. *International Journal of managerial finance*, 3(2), 164-177.

Gill, A., Biger, N., & Mathur, N. (2010). The relationship between working capital management and profitability: Evidence from the United States. *Business and economics journal*, 10(1), 1-9.

Helfert, E.A. (2003) *Techniques of Financial Analysis*, McGraw-Hill Irwin, New York.

Hill, N. C., & Sartoris, W. L. (1992). *Short-term financial management: text and cases*. Macmillan Publishing Company.

Kavitha R, Shanmugam R. (2014). A study on industry practices relating to working capital policies. *Global Journal for Research Analysis*, 3(6):132–140.

Kieschnick, R., M. LaPlante, and R. Moussawi. (2011). Working capital management and shareholder wealth, Working Paper. Available at SSRN:<http://ssrn.com/abstract=1431165>. (Accessed: 20 April 2018).

Kim, Y. H., & Atkins, J. C. (1978). Evaluating investments in accounts receivable: a wealth maximizing framework. *The Journal of Finance*, 33(2), 403-412.

Koumanakos, D. P. (2008). The effect of inventory management on firm performance. *International journal of productivity and performance management*, 57(5), 355-369.

Kung'u, J. N. (2015). *Effects of Working Capital Management on Profitability of Manufacturing Firms in Kenya* (Doctoral dissertation). Available at <http://41.204.187.24:8080/bitstream/handle/123456789/1612/KUNG%27U%2C%20%20JAMES%20Ndirangu%20%20%E2%80%93PhD%20Business%20Administration-2015.pdf?sequence=1&isAllowed=y>. (Accessed: 10 January 2018).

- Lazaridis, I., & Tryfonidis, D. (2006). Relationship between working capital management and profitability of listed companies in the Athens stock exchange. *Journal of Financial Management and Analysis*, 19: 26-25.
- Luo, X., Kanuri, V. K., & Andrews, M. (2014). How does CEO tenure matter? The mediating role of firm-employee and firm-customer relationships. *Strategic Management Journal*, 35(4), 492-511.
- Lyngstadaas, H., & Berg, T. (2016). Working capital management: evidence from Norway. *International Journal of Managerial Finance*, 12(3), 295-313.
- Mathuva, D. (2014). An empirical analysis of the determinants of the cash conversion cycle in Kenyan listed non-financial firms. *Journal of Accounting in Emerging Economies*, 4(2), 175-196.
- McMillan, J., & Woodruff, C. (1999). Interfirm relationships and informal credit in Vietnam. *The Quarterly Journal of Economics*, 114(4), 1285-1320.
- Mian, S. L., & Smith, C. W. (1992). Accounts receivable management policy: theory and evidence. *The Journal of Finance*, 47(1), 169-200.
- Miwa, Y., & Ramseyer, J. M. (2005). Trade credit, bank loans, and monitoring: Evidence from Japan. Available at http://lsr.nellco.org/cgi/viewcontent.cgi?article=1315&context=harvard_olin. (Accessed: 10 January 2018).
- Modigliani, F. (1957). Business reasons for holding inventories and their macro-economic implications. In *Problems of Capital Formation: Concepts, Measurement, and Controlling Factors* (pp. 495-511). NBER.
- Moles, P., Parrino, R., & Kidwell, D. S. (2011). Corporate finance. John Wiley & Sons.
- Mwangi, L. W., Makau, M. S., & Kosimbei, G. (2014). Effects of Working Capital Management on Performance of Non-Financial Companies Listed In NSE, Kenya. *European Journal of Business and Management*, 6(11), 195-205.
- Ng, C. K., Smith, J. K., & Smith, R. L. (1999). Evidence on the determinants of credit terms used in interfirm trade. *The journal of finance*, 54(3), 1109-1129.
- Nilsen, J. H. (2002). Trade credit and the bank lending channel. *Journal of Money, credit, and Banking*, 34(1), 226-253.
- Nobanee, H. (2014). Working capital management and firm's profitability: an optimal cash conversion cycle. *International Research Journal of Finance and Economics*. March (120), 13-22.

- Nobanee, H. (2014). Working capital management and firm's profitability: an optimal cash conversion cycle. *International Research Journal of Finance and Economics*, March (120), 13-22.
- Padachi, K. (2006). Trends in working capital management and its impact on firms' performance: an analysis of Mauritian small manufacturing firms. *International Review of business research papers*, 2(2), 45-58.
- Pais, M. A., & Gama, P. M. (2015). Working capital management and SMEs profitability: Portuguese evidence. *International Journal of Managerial Finance*, 11(3), 341-358.
- Peel, M. J., Wilson, N., & Howorth, C. (2000). Late payment and credit management in the small firm sector: some empirical evidence. *International Small Business Journal*, 18(2), 17-37.
- Petersen, M. A., & Rajan, R. G. (1997). Trade credit: theories and evidence. *The review of financial studies*, 10(3), 661-691.
- Pike, R., & Cheng, N. S. (2001). Credit management: an examination of policy choices, practices and late payment in UK companies. *Journal of Business Finance & Accounting*, 28(7-8), 1013-1042.
- Raheman, A., & Nasr, M. (2007). Working capital management and profitability—case of Pakistani firms. *International review of business research papers*, 3(1), 279-300.
- Raheman, A., Afza, T., Qayyum, A., & Bodla, M. A. (2010). Working capital management and corporate performance of manufacturing sector in Pakistan. *International Research Journal of Finance and Economics*, 47(1), 156-169.
- Ramachandran, A., & Janakiraman, M. (2009). The relationship between working capital management efficiency and EBIT. *Managing Global Transitions*, 7(1), 61.
- Schwartz, R. A. (1974). An economic model of trade credit. *Journal of financial and quantitative analysis*, 9(4), 643-657.
- Sharma, A. K., & Kumar, S. (2011). Effect of working capital management on firm profitability empirical evidence from India. *Global Business Review*, 12(1), 159-173.
- Shi, X., & Zhang, S. (2010). An incentive-compatible solution for trade credit term incorporating default risk. *European Journal of Operational Research*, 206(1), 178-196.
- Singh, G., & Singh Ahuja, I. (2014). An evaluation of just in time (JIT) implementation on manufacturing performance in Indian industry. *Journal of Asia Business Studies*, 8(3), 278-294.

- Singhania, M., Sharma, N., & Rohit, J. Y. (2014). Working capital management and profitability: evidence from Indian manufacturing companies. *Decision*, 41(3), 313-326.
- Smith, J. K. (1987). Trade credit and informational asymmetry. *The journal of finance*, 42(4), 863-872.
- Smith, K. (1980). Profitability versus liquidity tradeoffs in working capital management. *Readings on the management of working capital*, 549-562.
- Soenen, L. A. (1993). Cash conversion cycle and corporate profitability. *Journal of cash Management*, 13, 53-53.
- Stowe, J., & Gehr, A. (1985). Contract costing and trade credit. In *Western Finance Association Meeting, June*.
- Subramanyam, K. R., & Wild, J. J. (2009). *Financial statement analysis*. McGraw-Hill.
- Supatanakornkij, S. (2015). Determinants and consequences of working capital management. Available at <https://www.era.lib.ed.ac.uk/handle/1842/16454> (Accessed: 21 August 2018).
- Tahir, M., & Anuar, M. B. A. (2016). The determinants of working capital management and firms performance of textile sector in pakistan. *Quality & Quantity*, 50(2), 605-618.
- Tauringana, V., & Adjapong Afrifa, G. (2013). The relative importance of working capital management and its components to SMEs' profitability. *Journal of Small Business and Enterprise Development*, 20(3), 453-469.
- Temtime, Z. T. (2016). *Relationship between Working Capital Management, Policies, and Profitability of Small Manufacturing Firms* (Doctoral dissertation, Walden University).
- Tingbani, I. (2015). *Working capital management and profitability of UK firms: a contingency theory approach* (Doctoral dissertation, Bournemouth University). Available at <http://eprints.bournemouth.ac.uk/21785/>. (Accessed: 20 September 2017).
- Ukaegbu, B. (2014). The significance of working capital management in determining firm profitability: Evidence from developing economies in Africa. *Research in International Business and Finance*, 31, 1-16.
- Vijayakumar, A. (2011). Cash Conversion Cycle and Corporate Profitability—An Empirical Enquiry in Indian Automobile Firms. *International Journal of Research in Commerce, IT & Management*, 1(2), 84-91.
- Wen, Y. (2003). *Understanding the Inventory Cycle I. Partial Equilibrium Analysis* (No. 03-08).

Wilner, B. S. (2000). The exploitation of relationships in financial distress: The case of trade credit. *The journal of finance*, 55(1), 153-178.

Younies, H., Barhem, B., & Hsu, C. E. (2007). A review of the Adoption of Just-In-Time method and its effect on efficiency. *Public Administration and Management*, 12(2), 25.