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The influence of working capital management on the performance of Indian companies' stock market value

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Abstract
The study focused on the extent to which Working Capital Management can influence the value of the organisation, and it was seen that there was a gap in literature due to inconsistencies of past findings as well as insufficient literature on the subject in the case of Indian financial market. With India being the world's 5th largest economy and having some 7,800 listed companies, the Indian stock market is important and understanding how its market value is affected by issues like Working Capital Management is a relevant research interest. This formed the premise of the study aim, which was to determine the impacts that Working Capital Management has on the stock market performance of Indian companies. The research context for this study was the Indian stock market in general, and particularly the National Stock Exchange (NSE). Convenience sampling was used to gather the data and a total of 14 companies were included in the final sample. Data was gathered from four main data sources, which include company annual reports, National Stock Exchange stock reports, peer-reviewed journals as well as relevant online sources on the subject. The data was analysed using correlation to link the Working Capital Management ratios with performance ratios. The first objective was to analyse the extent of working capital in the total structure of sample firms. It was found that working capital practices used by the listed Indian companies are similar to those used by most listed companies in other major markets. The second objective was to analyse the impacts of various financial ratios derived from working capital on stock market performance. From the findings, it was shown that there is a weak negative correlation between these variables.

Keywords/Tags: Working Capital, Working Capital Management, Stock Market Value.

Miscellaneous (Confidential information)

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Abbreviations

ACP	Average collection period
APP	Accounts Payable Period
ARP	Accounts Receivable period
BSE	Bombay Stock Exchange
CCC	Cash Conversion Cycle
CSS	Capital Structure Substitution
GDP	Gross Domestic Product
ICP	Inventory Collection Period
IMF	International Monetary Funds
INP	Inventory Period
IT	Information Technology
MBV	Market to Book Value
NSE	National Stock Exchange
PEG	Price, Earning and Growth rate
PPP	Purchasing Power Parity
ROA	Return on Assets
ROE	Return on Equity
SEBI	Stock Exchange Board of India
WC	Working Capital
WCM	Working Capital Management
WFE	World Federation of Exchange

Chapter 1: Introduction

1.1 Background

Without the capital to pay for routine operations and daily activities of an organisation, it would be impossible to focus on the organisation's long-term strategies, even if they are high-potential strategies. For this reason, working capital remains an important concern among both business executives and scholars in the area of finance management. Sanger (2011) noted that there is increased interest in the question of how the management of capital contributes to organisation's overall growth. At the core of the concept, working capital management refers to managing the relationship between a company's short-term assets and short-term liabilities. Most companies are founded on a goal, and while the organisation's strategic management plans may contain long-term investment goals, the companies also have daily activities that must be achieved towards these bigger goals. As Muhammad and Syed (2011) rightly put it, these short-term activities accrue short-term liabilities, which require to be settled. As Hundal and colleagues (2018) note, capital structure affects the long-term financial health of an organisation, and this includes its equity and debt. To settle these liabilities, an organisation needs operating liquidity, and organisations whose current assets are more than their current liabilities are said to be liquid. However, when current assets are less than current liabilities, the organisation's operations may be paralysed by working capital deficiency (Sanger, 2011). The question, therefore, is not whether working capital may impact the organisation, but to what extent it can affect the organisation, and in what ways it can do so.

Ogundipe and Ogundipe (2012) notes that working capital management goes beyond looking at the balance between current assets and current liabilities, and transcends into looking at the company's ability to use its current assets and liabilities to maximise return on investments. Agreeably, Tauringana and Afrifa (2013) point out that this is only achieved when the company avoids, or at least tries to find the most efficient ways of minimising, cash flow issues that arise whenever there are higher current liabilities compared to the company's current assets. As Sharma and Kumar (2011) also point out, working capital is part of operating capital, which also includes fixed assets and long-term liabilities, and in this respect, it ties directly with the concept of organisation value. Working capital management ought therefore to be analysed not only in terms of the organisation's inability to repay its short-term liabilities, but also in terms of the extent to which it can influence processes, revenue generation, and profitability, among other organisational operations. While working

capital management (WCM) was traditionally a small area under corporate finance, in the past few decades, WCM theory has continued to develop into more specific aspects, including cash management, short-term financing, debt management, inventory management (Usama, 2012).

As the location of working capital comes closer to the centre of the organisation's business financial strategy, WCM continues to become an even more critical aspect of the overall corporate management discourse, which explains the strong interest among scholars and managers on the subject in the recent two decades. The central theme in extant literature about working capital is its role as one of the major factors that influence an organisation's financial performance. The intuitive thinking is that the larger an organisation is, the more the amount of current assets and liabilities it has, and therefore, the more the need for capital management (Sharma and Kumar, 2011). However, Sanger (2011) argues that this does not necessarily mean smaller organisations need working capital management less. Counterintuitively, it is possible that they may even need it more, considering that the majority of businesses are often at their most vulnerable stages in the early stages of the organisation when still has unstable operation structures and inexperienced management teams.

In spite of the rapidly growing body of literature on the subject, there remain several gaps that may benefit from further studies, and this includes inconsistency in assessment of the role of WCM, contrasting views on its impacts to the organisation, and lack of sufficient literature. Regarding inconsistent conclusions made by existing empirical studies, Gitmen (2009) argued that the major goal of WCM was to ensure the organisation's liquidity, thus sustaining its operations as a going concern. Gill (2001), on the other hand, argued that the first goal of working capital was to prevent the company from going into insolvency. For Pouragha and Emamgholipourarchi (2012), the purpose of WCM is to improve efficiency of the company's operations, while Jagongo and Makori (2013) brings another perspective, arguing that it serves the role of maximising return on assets. While all these roles are positive, it may confuse management as to what their primary reason should be for implanting WCM since each management strategy focuses on some narrow areas of organisational growth while leaving out others for later implementation. Thus, without a clear understanding, it would be impossible to know whether WCM is relevant for a particular management strategy or not.

Secondly, while a surplus of literature, like the ones cited above, hail the positive impacts of WCM on organisational performance, others have found negative impacts.

Notable studies to this end include Shin and Soenen (1998), Deoloof (2003) as well as Rehman and Nasar (2007), all of whom studied the relationship between profitability of the company and aspects of WCM such as cash conversion cycle, receivable turnover and inventories turn over. Lastly, inasmuch as many studies have been published on the subject, few of them are specifically on the impacts of WCM on stock market value, and no studies were found that particularly focus on how it impacts stock market value of Indian firms. Upon such a background, this study adds to the discourse by focusing on how WCM has affected the stock value of Indian companies.

1.2 Overview of the Indian stock market

Before overviewing the country's stock market, it is imperative to understand its economy. With a population of 1.33 billion people, India is the world's second most populous country after China (IMF, 2017). Its economy has experienced a consistently positive growth in the recent past, giving it a total GDP (purchasing power parity (PPP)) of $11.4 trillion US dollars, and a total nominal GDP of $2.97 trillion (IMF, 2017). This makes it the world's third and fifth largest economy, respectively, behind only US, and China in the PPP aspect, as well as Japan and Germany when considering the second aspect (CIA World Factbook, 2017). Despite these impressive figures, India's corporate sector is not comparably developed. As of October 2016, India's corporate sector contributes an estimated 12% to 14% of the country's GDP, compared, for instance, to USA, in which the corporate sector contributes about 70% of the GDP. While this is very minimal compared to the trends observed in developed markets, Thukral (2018) remarks that India's corporate sector contribution is still high in the standards of developing economies, but there is much room for improvement.

Out of the entire Indian corporate sector, total of 7,800 companies are listed. Of them, only 4,000 trade their stock in the country's stock exchange market while the rest seem to be solidly non-trading stock or long-term trading stock (Chandrasekhar, Mallick, Sarat & Akriti, 2011). As a result, the entire stock exchange sector of India accounts for about 4% of the country's GDP, while the majority of the region's remaining income is earned from small scale businesses classified under the unorganised sector.

India has two stock main exchanges: Bombay Stock Exchange (BSE) and National Stock Exchange (NSE). Of the two, BSE is the oldest, having been formed 145 years ago, and this makes it the oldest stock exchange in Asia (BSE, 2019). Measured by

market capitalisation, it is the world's tenth largest stock exchange with $2.2 trillion as of April 2018, which is equivalent to ₹151,970.87 billion. By comparison, NSE was founded in 1992 as a competitor to its predecessor. It quickly grew in terms of market capitalisation and by 2018, it was valued at $2.2 trillion, making it same in size to BSE. Both stock exchanges are located in Mumbai and both are regulated by the government (World Federation of Exchanges, 2018).

As of 2018, there was a total of 60 million retail investors in India's stock market, counting both mutual funds investors and direct investors (Thukral, 2018; National Economic Debates, 2011). Further, it is interesting to note that, while 10% of the Chinese population and 27% of the US population participate in stock market investments, only 1.3% of the population of Indians did the same. This goes to show that not only is the corporate sector a comparatively small player in the national economy, but the number of investors is also relatively small (Jalan, 2010). Chandrasekhar, Mallick, Sarat and Akriti (2011) argue that there is an immense opportunity for growth both for existing publicly listed companies as well as for start-ups that have yet to be listed or traded on the stock exchanges. Supporting these views are the findings by Hawksworth and Tiwari (2011), who noted that India's economy is likely to surpass that of the US by 2045, driven by its rapidly growing middle class and steadily expanding economy.

The Indian exchange sector is regulated by the Securities and Exchange Board of India, or SEBI (Hundal, 2016). According to SEBI regulations, it is possible for companies to list their stocks in both exchanges and, for this reason, many of them do (SEBI, 2019). While the exchanges' market capitalisations are at par with each other, they have many other differences which may influence individual decision of both companies looking to get listed and investors looking to buy and sell stock. The next chapter discusses this at length, but to highlight the core differences, one may consider the volume and number of listings. Chandrasekhar, Mallick, Sarat and Akriti (2011) noted that while BSE has more listings, giving traders more options, NSE has a larger trade volume, which provides more liquidity, thus making it possible to trade more quickly. For this study, the companies used as the case studies are selected from the NSE, as it registers the highest amount of trade volume per each trading week.

1.3 Motivation for the research

The study is motivated by two related rationales. The first is industry motivation. Performance is the vital metric by which any business organisation is assessed. While this includes both financial and non-financial performance, Sanger (2011) argues that a majority of investors are more focused on the financial aspect of the organisation, and consequently, companies with better financial performance records are considered more favourably by investors. Naturally, investors, are more likely to prefer putting their money in companies with the strongest performance potential, thereby increasing the company's stock valuations. Contrarily, they are equally as likely to abandon stocks that show no performance or potential. Finding out the extent to which WCM influences performance and how such influences occur may therefore help managers make better financial decisions, which directly contributes to improved organisational performance, and this can contribute to increased company and industry value.

Secondly, there is a personal motivation to complete this study. As India's economy continues to grow, there are increasing opportunities to invest in its stock market. With a strong understanding on issues that affect the stock market value of listed firms, an investor's decision-making capacity is meaningfully increased (Shehzad, Ahmed, Sehrish, Saleem & Yasir, 2012). As such, while this study contributes to literature by providing useful policy critique and practical views, it also provides potential investors an opportunity to increase their ability to learn, thereby improving their decision-making process in this regard. Similarly, with the goal of becoming a business executive in India in mind, this study presents an important opportunity to study one of the main market factors that influence performance, which increases management knowledge, while also increasing the confidence of a young business manager.

1.4 Research questions

- To analyse the extent of working capital in the total structure of the sample firms
- To analyse the impacts of various financial ratios derived from working capital on the stock market performance.

1.5 Structure the dissertation

Chapter one focused on the background of the study. To this end, it has painted a picture on the importance of WCM as opined in theory, while also highlighting the various studies which document its impact to an organisation's performance. The chapter goes further to give an overview of the main gaps in literature, raising the question as to the extent to which WCM contributes to an organisation's financial performance. It then gives a brief general view of the Indian stock market, while also narrowing down to the two leading exchanges used by public companies operating in the country. This is followed by a clear breakdown of the main justifications for the study and the core study aim and objectives. Chapter two presents the literature review, in which the concepts and theories related to WCM are critically examined and the empirical literature critically reviewed. Hypothesis tests are also developed. In chapter three, the methods and approaches used in the study are addressed, including data collection practices and ethical considerations. Chapter four focuses on the presentation analysis of collected data, their analysis, as well as discussion and links with literature. The last chapter of the dissertation, chapter five, is a summary and conclusions section, which also captures the study's recommendations for future research.

CHAPTER 2 - LITERATURE REVIEW

This chapter focuses on the critical review of extant literature on the subject of WCM and its impacts on an organisation's stock value. The chapter is organized into seven main sections guided by the main research aim and the supporting objectives identified in chapter one. The first section is a discussion of the concepts and theories of WCM and this covers the definitions of working capital, WCM, stock market value. It also covers five key theories including the resource-based theory of the firm, operating cycle theory, cash conversion cycle theory, risk and return theory as well as the agency or stakeholder theory. The second section discusses factors that influence working capital such as firm issues and industry issues, while the third section is a review of extant measurement methods of WCM – both traditional and dynamic components. In section four, the question of how to measure the stock market value is addressed, bringing the literature review to the core of the issue, which is linking WCM and stock market value through a critique of empirical evidence. With a clear picture of what has been done this far and the main gaps, the literature turns to

hypothesis development, which then narrows down to development of the research framework, which completes this chapter.

2.1 Key Concepts and theories of Working Capital Management

2.1.1. Defining working capital

Umara, Sabeen and Qaisar conceive working capital as an organisation's lifeline, without which the business cannot operate. Akinlo (2012) defines working capital as the metric which show the extent to which an organisation is financially liquid. This is because it is possible to find an organisation which has a strong asset base but lacks cash or near cash capital, and this may hamper its daily routine operations such as payroll expenses and supplier credits. Usama (2012) breaks own working capital into gross and net working capital, where the first refers to current assets available to the organisation, whereas net working capital refers to the difference between the current assets and current liabilities. A negative difference leads the organisation to have a working capital deficit, and this makes it a challenge for an organisation to continue to operate.

Because working capital is current assets minus current liabilities, four main accounts contribute to it directly, made up of three current asset accounts and one current liability account. The former three are inventory, accounts receivable and cash and cash equivalents, while the latter is accounts payable. Sanger (2011) further notes that part of the long-term debt which is due in the current financial year further contributes to the current liabilities. As noted in the first chapter, an increasing positive balance may indicate that the organisation is liquid. Akinlo (2011) notes that this can be achieved in two ways, which are through decreasing current liabilities, or increasing current assets, or both. From the accounts affected by the working capital, one can derive two benefits of increasing those funds, which highlight the significance of working capital management. First, an organisation can be in a position to sustain repayments of maturing debts. Second, the organisation can be in a position to pay up operational expenses.

2.1.2. Working capital management

Like many business terminologies, working capital management has been variously defined, based on both context of the researchers and the motivation of their studies. Akinlo (2012) defines working capital management as the administration of the funds set aside to run an organisation's daily activities efficiently, with the goal of helping

the organisation achieve its objectives. Tauringana and Afrifa (2013) offer a more specific definition by defining WCM as the management of prepayments, stock, creditors, debtors, accruals, short-term loans and cash with the goal of improving an organisation's profitability. Narrowing it down further, Sharma and Kumar (2011) define working capital management simply as the process of administrating current liabilities and assets. But these definitions limit the significance of working capital management. They confine it to a function, without stating or hinting at the significance of this function.

Offering a different perspective, Ashraf (2012) take WCM to mean the planning and control of current liabilities and assets in the organisation by preventing over spending in fixed assets and minimising accrual of current debt to eliminate the problems that may arise from failure to repay short-term obligations while having capital stuck in illiquid assets. This definition is supported by Talha, Christopher and Kamalavalli (2009) who adds that WCM involves maintaining of cash flow, as well as Jagongo and Makori (2013) who highlights elimination of negligence in current assets and liabilities. Thus, this study relies on this more in-depth conception of the term. WCM is a critical requirement in an organisation not because of the need to accumulate large sums of liquid capital, but to ensure that an organisation has just sufficient funds to deal with its current liabilities, but not too much to hamper it from investing in profitable ventures. This optimal balance is so crucial that it might impact the value of the firm as discussed in the next section.

2.1.3. Defining stock market value

The shareholder theory argues that the most important role of the organisation is to maximise returns to the shareholders (Ademola and Kemisola, 2014). While the stakeholder theory offers a broader view of parties that should benefit the organisation, it also supports the view that the organisation ought to benefit its investors, even while fulfilling other fundamental goals to other stakeholders. An organisation that fulfils its responsibility to its stakeholders, especially shareholders, becomes more preferred than one that fails to do so. When shareholders prefer one organisation to the other, they are likely to invest in the preferred one and abandon the other, leading to a strong demand for its shares. This increases the value of the company's shares, which is the stock market value.

To understand stock market value, it is important to first know what a stock market is. Damodaran (2002) points out that a stock market is a place where buyers and sellers

of a portion of a company's equity congregate to trade. This portion of equity represents an ownership or stake in the company, and are referred to as stocks or shares, which in the case of publicly listed companies, forms the majority of the securities listed on a stock exchange. While stock markets were physical places traditionally, the emergence of computing and the internet has made it possible for stock trading to happen virtually through phone calls and the internet. While a stock exchange is a company that lists other companies and offers buyers and sellers the platform to meet and trade, a stock market typically refers to a categorisation of stocks, usually by country. For instance, the Indian stock market refers to stocks available to the public for companies that are domiciled or trade their stocks in that country.

Ademola and Kemisola (2014) note that from a wider perspective, stock market value is generally the value of the stock market in currency terms. As of 2017, the entire global stock market, which implies the global stock market capitalisation, was 79 trillion USD, up from 50 trillion USD in 2008 and 67 trillion USD in 2015 (World Bank, 2019), showing a positive growth over time, as shown in figure 2.1. As of 2012, the largest stock markets by country were USA, Japan and UK with 34%, 6% and 6% of the total global share (WFE, 2012). Accounting for 87% of the global market capitalisation are 16 stock exchanges, each of which has a market valuation of more than one trillion USD and all of them are based in only three continents, namely, Asia, Europe and North America. The only exception is Australian Securities Exchange. The value of the stock market for a country is calculated by adding the total value of the stocks in that market, which implies that if more companies in a country have higher stock values, then the country will rank better on the global stock market list.

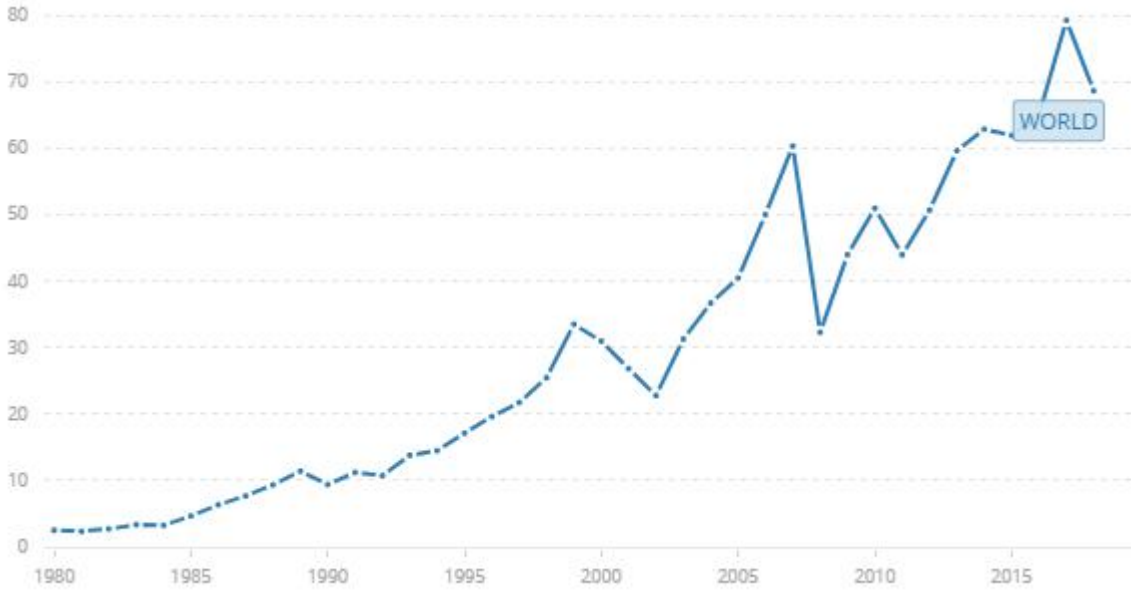

Figure 2.1: Market capitalization of listed domestic companies (current US$)

Source: World Federation of Exchanges (2018)

At a company level, stock market value refers to the value of the entire stock portfolio of a company, otherwise known as the market capitalisation. This is calculated by considering the value of each stock and the total number of stocks available through the stock valuation process (Ademola & Kemisola, 2014). The authors emphasise that stock market value of the company is totally different from the book value of the company, which represents value of the company based on the total assets it has in its balance sheet. The stock market value of a company is an indicator of investors' confidence in the company's future performance, and as Damodaran (2002) rightly point out, the higher it is, the stronger the confidence can be said to be. For instance, After Apple overtook Microsoft in 2010 as the latter faced problems with its Nokia acquisition, which dimmed investors' prospects about its success, it surpassed the iPhone giant again in 2018 after replacing its CEO, years of consistent profit and revenue growth as well as the launch of its cloud computing platform. This last stagey singly saw the company's shares jump by 3% within a single day of trading, showing that investors had strong confidence in the future of cloud-based computing (Randewich, 2018). For this study, stock market value is used as conceived at the company level as opposed to the market level. In this respect, the question of WCM is examined on the bases of how it influences individual firms' value even though those firms contribute to overall stock market value as well.

2.1.4. Theories of working capital management and stock market value

Several major theories can be used to understand the role and use of working capital in relation to stock market value. Aminu (2015) identifies five such theories, including the resource-based theory of the firm, operating cycle theory, cash conversion cycle theory, risk and return theory as well as the agency or stakeholder theory. Afza and Nazir (2007) argue that most financial theories that explain market value of an organisation have been explained using a long-term view, which focuses mostly on the long-term impacts of investments and assets accumulation, thereby leaving a gap in literature for explaining the contribution to company value of short-term investments that mature within 12 months. Earlier, Talha, Christopher and Kamalavalli (2010) had noted that it is essential to examine how theory explains value and profitability of firms since in the age of rapid globalisation, organisations needed liquidity to implement new technologies, markets, products and services as they expanded both globally and domestically.

According to the agency theory, one party engages another party to do some task on their behalf, thereby creating a principal-agent relationship, or the agency relationship (Aminu, 2015). When this happens, the principal is necessarily forced to delegate some decision-making powers to their agent for this arrangement to work. As Hundal (2016) rightly points out, the theory stipulates that agency relationships may be faced with problems because often the needs and interests of the agent and the principal are misaligned, leading to conflicts of interests. In business, shareholders who own the company's equity act as principals by enabling organisation managers to act as their agents in ensuring that the business sets and achieves its growth objectives. However, the main problem arises because the management's interest may be short-term growth, which leads to promotion and bonuses, while the owner's interest may be long-term growth, which leads to the increased company value over time (Afza and Nazir, 2007). In WCM, this theory may be used to understand the decisions of the financial managers because they make major decisions regarding the use of the company's short-term resources such as inventory, stock, receivables and payables. On the other hand, the owners supply the capital the firm needs to do both short-term and long-term investments.

Mukherji, Desai and Wright (2008) point out that another relevant theory is the risk and return theory, which stipulates that the higher the risks, the higher the chances of increased returns. The underlying weakness of this theory is that apart from being too general in context, it does not state that higher risks equal higher returns, it only improves the chances of higher returns. This distinction is relevant because unjustifiable risks that ignores due diligence will often guarantee losses (Tiegen and Brun, 1997). In the context of the organisation, this theory becomes relevant because two attitudes influence managerial decision-making relating to capital and return, which are risk aversion and risk appetite. Agreeably, Richard, Stewart and Franklin (2008) further argues that risk averse financial managers may focus on retaining the company's liquidity, while managers with a strong appetite for risk may be willing to trade off this liquidity for profitability and increased company value. Ebenezer and Asiedu (2013) emphasizes that too much liquidity may also bring problems to the business including increased non-earning capital, collection costs, default rates, as well as missed opportunity costs.

The resource-based theory can also be stretched to apply in the context of working capital management. Corley and Gioia (2011) notes that resources within the organisation are in two forms, human or material resources. While material resources

are capital and everything that capital can buy, including intangible assets, human resources are a unique type of capital as they provide the ability of the organisation to arrange its isolated resources into a system that optimises their usefulness, thus creating a strategic advantage. In the context of WCM, this theory can be used to explain why two companies that have comparable strategies and liquidity may experience different managerial directions, where one ends up increasing profitability and liquidity, while the other experiences debt and bankruptcy problems. The managers contribution as decision-makers is central to such outcomes.

Richard and Laughlin (1980) developed the cash conversion cycle (CCC) theory in bid to provide a more specific theory for WCM. Their theory sought to explain the gaps left by the three theories above, which failed to explain specific components of the working capital by their generalisations. The theory stipulates that working capital undergoes a cycle which starts when the organisation pays for its raw materials, and continues as the materials are transformed into new products, sold to buyers to generate cash and receivables, which have then to be collected to inject into the process all over again. Richard and Laughlin (1980) further argue for the need to appreciate that all working capital undergo varying conversion speeds, which leads to varying life expectancy. Supporting this theory, Aminu (2015) argues that CCC is the most useful theory in explaining working capital management as it puts the working capital process at the centre of the discussion.

Closely related to the CCC theory is the operating cycle theory, which focuses on working capital efficiency. Like the CCC it also considers the inventory and receivables that come into the organisation, and how fast the organisation converts raw products into new cash for fresh operations. Supporting this theory, Aminu (2015) argues that the use of efficiency of the operating cycle approach makes it better at understanding working capital compared to traditional approaches which use acid test ratios. Another major contribution to this theory is that it also considers changes in working capital management policies of the company, which, as Corley and Gioia (2011) rightly noted, have a direct bearing on the organisation sales. In this study, these theories are all found relevant in explaining the factors that influence working capital as well as its relationship with the value of the organisation, except the risk and return theory.

2.2. Factors that influence working capital management

Working capital is influenced by different factors, and as literature shows, these can be grouped into five major categories, which include size, industry practice, share of the market, nature of the business, and the market environment (Moradi, 2012). Gill and Biger (2013) mention a sixth factor, current assets, which they argue to have a different impact from that of firm size. According to Nwankwo and Osho (2010) a larger multinational organisation is likely to have more expenses dedicated to routine operational activities than a small start-up, and this explains why the first will have higher working capital needs. While WCM is important in both cases, poor management leads to more financial losses for the multinational corporation. For this reason, while smaller firms may have untrained managers running their working capital to save on payroll expenses, this is a risk a larger organisation is unlikely to take, opting instead to get not only trained but also highly experienced experts with higher staffing costs.

Similarly, some industries have more need for current expenses than others, and this is influenced by the type of products and services they offer. For instance, an oil company which require large amounts of oil to sell will have most of its investments in current assets, as opposed to a real estate company whose investments are fixed assets such as buildings and land (Imran and Housheen, 2010). This is closely related to the factor of business nature, as Jagongo and Makori (2013) point out that two companies operating within the same industry may adopt diametrically opposite business strategies. While they may be both in the retail sector, one company may own its production lines, requiring more staff in the production as well as main business end, while the second company may focus on retailing branded products from other manufacturers, thus reducing its payroll expenses and associated overheads.

The question of environment comes in because organisations operate within societies, which have varying socio-political, economic and legal aspects that influence their operation policies. As Nazir and Afza (2009) puts it, firms operating in volatile business environments may want to have near liquid investments, while businesses operating in a stable and growing economy may have an incentive to have larger fixed assets. On the other hand, Nordi and Noriza (2010) argue that government regulations and policies may also influence the manner in which assets and liabilities are reported, and since these ultimately influence the final profitability and position statements, organisation’s may consider aligning their business decisions to maximise legal

provisions. Discussing how current assets influence working capital, Oladipupo and Okafor (2013) pointed out that increased current assets led to the direct increase of working capital available to the organisation, and while working capital management should not necessarily focus on continuously increasing the available working capital, an organisation with a stronger demand for current assets would require a financial management team that understands how to balance this with investments in long-term assets for this to be achieved.

2.3. Measuring working capital

Working capital (WC) measurement approaches are broadly categorised into two groups: traditional versus dynamic measurement. According to Ramachandran and Janakiraman (2009), traditional measurement techniques of working capital rely on three key ratios, namely, cash ratio, quick ratio and current ratio. On the other hand, dynamic measurement techniques use any of four cycles, and these are cash conversion cycle, trade cycle, operating cycle, and weighed cash conversion cycle. These cycles measure the period it takes to turn around the various company accounts as described in section 2.8. However, Hundal (2015) argue against the use of traditional performance measures as they depend too much on historical information. Further, Ademola and Kemisola (2014) note that the major advantage that dynamic approaches have over traditional approaches when it comes to measuring working capital is that cash conversion cycle, which is also known as net trade cycle, is a more useful tool for measuring liquidity as it impacts profitability than using cash ratios.

According to Sing and Asress (2011), an even more sophisticated measurement model for working capital was developed that may be better at providing dynamic working capital values. They cite the work of Enyi (2006) who argued that while the traditional WC measurement techniques are insufficient in today's business environment, even the existing dynamic approaches could further be improved. Enyi justifies this point by reflecting on the lack of capability for both measurement methods to predict possible future financial crises. As an alternative, he proposes a new model called Relative Solvency Ratio, which combines both current business cashflows and projected future crises. Nevertheless, this model has not been sufficiently tested, making it inappropriate for the present study. As a result, the WC in this study is based on the dynamic measurement techniques.

Imran and Nousheen (2010) argue that the most popular of the dynamic techniques is the cash conversion cycle, or CCC, which refers to the difference in days between the

time when capital is spent on purchasing raw materials to the time cash is collected for the finished products sold off that raw material. This duration is known as the average collection period, or simply ACP. Supporting this perspective, Sathyamoorthy and Wally-Dima (2008) add that CCC's usefulness is mainly because of its ability to measure efficiency of the working capital based on the payables received by the business specifically from the products sold from a particular capital invested in a specific product. According to Bieniasz and Golas (2011), CCC is also efficient because it also measures WC by relying on two other proxies, which are the average collection period (ACP), which accounts for receivables management, as well as inventory conversion period (ICP), which accounts for inventory management. By relying on these three partial cycles, argues Deeloof (2003), CCC becomes a well-balanced measure upon which the decisions of working capital management can be pegged. It is used together with account receivable and account payable periods.

As noted in the background section, the significance of WCM transcends beyond calculation of surpluses and deficits in the working capital and involves, as well, the determination of appropriate short-term capital sources, ideal investment platforms for those finances while they are not due to be used, and strategies for dealing with emergent situations. To this end, WCM also has a risk analysis aspect, and the manager in this position has to consider two main important risk factors mentioned by Al Shubiri (2011). The first is the risk of capital. Any investment has the potential to lose money, and when this happens, the business may suffer if it did not have a back-up plan. Secondly, there is always the cost of financing, whether the organisation uses its equity capital or debt funding. The higher the cost of capital injected into current assets, the lower its return (Oladipupo & Okafor, 2013). As a result, WC manager ought to always be cognizant of the two risks, as they help inform the business how risk-aggressive, or risk-averse, their strategies are.

2.4. Measuring stock market value

Before delving into the theoretical debate about stock market value measurement, a practical example may suffice to illustrate the concept. The stock prices for Apple – the American technology company which mainly produces smartphones and laptops and their supporting software – ranged between $140 and $240 from October 2018 through October 2019. Microsoft, which makes rival computer hardware and software products, had its stock trade at between $100 and $140 over that period (Yahoo Finance, 2019a; Yahoo Finance, 2019b). While using this metric alone would imply

that Apple's stock is 40% to 60% more expensive than Microsoft stock, it does not mean that Apple stock is that more valuable. In fact, over the same period, the total valuation of Microsoft has remained constantly above that of Apple, even if only just (Witowski, 2018; Ventura, 2019). What this shows is that stock market value is influenced by the volume of stock. But as Bond and Cummings (2004) rightly point out, even by this metric, the companies with the largest market capitalization may not necessarily be the most profitable or revenue-generating organisations in the market. Looking at the Global 500 2019 List, Forbes' annual publication of company rankings by revenue, one finds the world's largest companies by market capitalization, Microsoft and Apple, at numbers 60 and 11 respectively, with the latter being significantly ahead of its rival. Both were behind Walmart and Royal Dutch Shell, both of which have much lower stock prices (Fortune, 2019). Measuring stock market value is therefore not a straightforward issue that focuses on one variable only, but a complex concept that scholars continue to debate about.

Chan et al. (2003) argues that, unlike the company's book value as considered by accountants, which gives the company's assets and liabilities, and the fair value which interests economists by indicating the company's value as per its usefulness in the market, shareholders are more concerned with market value. This last value aspect shows the ability of the company to transform investments in stocks into returns. As companies become more market-oriented, the gap between their market and book value becomes bigger, and it becomes harder to use book value as a measure of the company's internal value. Pilkington (2017) argues that the gap between current stock prices, market value and intrinsic value is therefore commonly used as a measure of a firm's reward for investing in its stocks. In this regard, should the stock value fail to match stockholder expectations, owners dump their stock and the company loses investment capital necessary for long-term growth. This is because stock valuation is used to estimate and predict potential market prices, in which investors benefit from predicting the correct price movement and trading accordingly.

Methods of valuating stock can be grouped into fundamental criteria and market criteria (Pilkington, 2017). The first focuses on fair value of the firm, while the latter focuses on the potential returns of the firm. Discounted cash flow is a common stock valuation method used to valuate stock using the fundamental approach, as it gives the earnings, dividends as well as cash flows an organisation is likely to bring at a discounted rate some time in future. The rate of discount is also the risk factor of future returns. Other metrics used to calculate the stock value include price to earnings

ratio, earnings per share of the stock, as well as the growth rate of the firm (Bond and Cummings, 2004). According to Blanchard, Rhee and Summers (1993) the capital structure substitution theory (CSS) gives an asset pricing model that can be used to find the value of a company's shares. However, Siegel (2010) found that the model can only work for finding bond-holding companies, as the rate of trading by shareholders and issuance of shares by companies, equilibrium pricing becomes unreliable shareholding values. Another method is the sum of perpetuities method, in which the PEG (price, earnings and growth rate) ratio is considered together with the dividends and discount rate. While they vary in application, the above ratios can all be used to determine stock value, the underlying similarity is that they are based on the company's intrinsic factors.

The market criteria approach has been used to calculate stock value when the company is believed to be trading in a well-organized stock market, where all the known information about the stock and company history are available for all investors. According to the efficient market hypothesis, this is because when this is done, it becomes impossible for any individual to constantly beat the market by predicting stock prices using historical information since all traders have the potential to react to new information at the same time (Siegel, 2010). This theory stipulates that markets which rely purely on published historical information are weak form efficient, while those that rely on some private information in addition to historical and publicly available information are strong form efficient (Chan et al., 2003). Stock valuation methods that rely on market factors consider extrinsic factors that are not within the company's control, such as timing of trade, risk factors and beta coefficients. However, the theory has been heavily criticized by both scholars and corporate investors, who argue that market imperfections arise from investor overconfidence, information bias, cognitive bias as well as overreaction among other factors that are not accounted for by the model (Chan, et al., 2003).

In this study, instead of using a single approach, the fundamental and market criteria are both used. To do this successfully, the study relies on market to book value. Introduced by Kaldor in 1966 and popularised by Tobin in 1977, the ratio measure's a firm's performance based on the market value of equity and liabilities (calculated based on share price time the shares outstanding) divided by the sum of book value of equity and liabilities. But some sources consider it simply as market value divided by book value as shown below, by assuming that the liabilities are equal (Akram et al., 2016).

Market to book value = (equity market value) / (equity book value)

To interpret the result, three possibilities are considered. If q is equal to 1, then the company's book and market value are in tandem. If q is greater than 1, then the company's market value is greater than its assets, meaning the company is overvalued or there is some unmeasured asset in the company. This implies that shareholders are confident about the company's ability to make returns, which means they cans sell shares at a profit (Bond and Cummins, 2004). But if q is less than one it means the company is undervalued, which implies that investors are uncertain about the company's ability to make the required rate of return. Shareholders intending to sell their shares when the company is undervalued must therefore do so at a lower price (Damodaran, 2002).

2.5. Linking working capital management and stock market value

Studies on WCM and firm value have been studied by a number of scholars and researchers across different markets. The studies show differing conclusions and the following is a critical review of some relevant ones.

Usama (2012) studied the impacts of WCM on firm value, liquidity and profitability. The study focused on companies in the Pakistani stock market, and data was collected from companies listed on the Karachi Stock Exchange. The WC metrics used included cash conversion cycle, debt ratio, financial assets to total assets ratio, operating profits, current ratio, inventory turnover, as well as the average payment and collection periods. The data was analysed using least square method, and from the analysis, it was found that there was a positive link between firm liquidity, value and profitability, with WCM. This finding was in contrast with the findings of Ahmed (2012), who studied WCM performance on non-financial companies it the same market using the logistic regression model and Pearson Correlation. According to Ahmed (2012), WCM positively influenced only inventory and debt turnover and the current ratio, while it had a negative correlation with total and current assets, both of which influence return on equity. Taking a different approach, Nazir and Afza (2009) looked at conservative and aggressive WCM approaches and how they influenced firm performance and market value. The study focused on seven years of data from 204 companies, which it analysed using panel data regression and found that as the degree of aggressiveness increased, the profitability and firm value declined. Notably as well, the study showed that there was a positive link between WCM policy and market to book value.

Focusing on the African market, Salawu (2007) studied the link between WCM policies and firm value, focusing on the aggressive versus conservative policies. The study sampled data from the Nigerian market, and used evidence from 42 companies published between 1994 and 2003, which was analysed using Pearson Correlation. From the study, it was seen that there was a negative link between WCM aggressiveness and asset value. While the findings were similar to those of Nazir and Afza, the study only focused on the book value of the firm, as opposed to the stock market value. Ogundipe, Idowu and Ogundipe (2012) also studied the Nigerian stock market while analysing how market value and firm performance was influenced by WCM policies. The study looked at 54 companies in non-financial sectors and gathered data spanning 15 years starting from 1995. The authors relied on CCC as their measure of WCM while market to book value was used to measure market value of the firm. From this study, it was also noted that there was a negative link between market valuation and WCM, although debt ratio was seen to show a positive link.

Focusing on the Malaysian stock market, the study by NorEdi and Noriza (2010) looked at WCM and performance of firms by relying on the data collected between 2003 and 2007. This study relied on data from 172 organisations selected through random sampling and analysed using Pearson's Correlation. While positive correlation was evident between market to book value and current asset to total asset ratio, the market value indicator had a negative correlation with CCC, current liability to total asset ratio, as well as current asset to current reliability ratio.

Palani and Mohiden (2012) studied the link between WCM aggressiveness and the performance of firms in the Indian market. Their focus was on 204 companies listed in the Bombay Stock Exchange and they used panel data to analyse the selected metrics for the financial period of 2010 going back to 2002. Their study showed that WCM was negatively related to aggressive investment policies as well as market value. On the other hand, they found a positive link between aggressive financing policy and market value, thus confirming the findings of Ogundipe et al. (2012). Still in South-eastern Asia, AlShubiri (2011) studied WCM practices and their relationship with performance of firms in the Jordan stock market. Their data spanned five years from 2004 to 2008 and came from a total of 73 listed companies in the Amman Stock Exchange, from which they found that market value and CWM was positively related. Specifically, the study found that market to book value, ROA and ROE were directly related with aggressive financing policies but negatively related with aggressive investment policies.

In summary, three main findings emerge from the foregoing literature. First, there is a gap in literature as to the study of WCM and market value within the Indian stock market, with only one study found to have been conducted in the recent past. That study could benefit from follow-up studies using more recent data and looking at the rival market within the Indian stock market, which is the National Stock Exchange (NSE). Secondly, it emerges that different markets may have different ways in which they react to WCM as far as market value is concerned. While some markets show a positive link, others have a negative link, while other still have a negative link between WCM and aggressive management strategies, while showing positive links between passive WCM strategies and the firm's market value. This difference is exposed best in the studies by Palani and Mohiden (2012) and AlShubiri (2011) because, while both studies focus on the Asian market, they reach opposite conclusions. Based on these gaps and conflict of extant literature, the next section critically examines fresh hypotheses based on the literature, which can be used to guide further research as justified in chapter three.

2.6. Hypothesis development

From the literature, the main measures of WCM are accounts receivable period, account payable period, and inventory conversion period, while the main measure of market value is market to book value.

Hypothesis 1: ARP directly and significantly impacts market to book value.

The account receivable refers to the total amount of money owed the company by its creditors and customers. It is calculated by considering the average proportion of account receivable balance and sales and multiplying it by 365, which gives the period in days it will take the company to collect its credit sales (Akram, Jamil and Ali, 2016). This result is expressed as the accounts receivable period (ARP). A shorter ARP implies that the organisation is in a position to collect its money from creditors faster, thus giving the company more liquidity, which enables further utilisation of the cash to generate revenue and profits. This means that shorter ARP leads to higher profitability and firm value.

Linking this with WCM, Aminu (2015) finds that the goal should be to reduce the time creditors take before making repayments. On the other hand, Akram et al. (2016) also cautions that it is beneficial for the organisation to consider allotting their customers sufficient time to repay their dues, as this helps them establish long-term

customer relationships, which also contribute to future organisation sales and profits, which influence firm market value. Thus, rather than blindly reducing the time, the strategic WCM decision here is to find the optimal balance between short and long repayment periods, which leads to the first hypothesis.

Hypothesis 2: There is a direct and significant relationship between APP and market to book value.

Secondly, account payable refers to the money the business owes its lenders and suppliers that is due for repayment in the current financial year (Aminu, 2015). According to Muhammad (2016), the average length of time the business takes to settle its short-term debt is referred to as account payable period, or APP. Like ARP, it is calculated by dividing the total payables by purchase and multiplying it by 365 days. A shorter ARP implies that the company meets its short-term obligations early, while longer periods means it takes long to repay its creditors. Tauringana and Afrifa (2013) argued that efficient APP management requires an optimal balance between staying too long and paying too soon as the first may lead to lack of creditworthiness, while the latter may cause cash flow problems. Giving a recommendation, Gill and Biger (2013) argue that making timely payments while negotiating for smaller monthly instalments spread over time may help keep suppliers happy while also maintaining liquidity. Thus, managed correctly, APP may free cash for continued operations, which increases firm profitability and value, while poor management may lead to bankruptcy, thus diminishing market value of the firm. This forms the basis of the second hypothesis.

Hypothesis 3: INP directly and significantly influences market to book value.

Inventory refers to the amount of stock a business has, which traditionally comprised the available goods for sale (Pong and Michell, 2012). However, with the emergence of service firms and project-based firms like construction companies, the meaning of inventory is expanded to include not just goods for sale but also all the work input that has been incurred prior to a sale, which includes human labour, raw materials, partially processed information, partially finished projects as well as finished projects and services waiting to be delivered or sold. Pong and Mitchell (2012) define inventory period, or INP, as the proportion of stock to cost of products and services sold over a year, calculated by dividing the stock and cost of sales and multiplying by 365. The longer the INP, the longer it takes the company to convert inventory, whereas a shorter INP means the company quickly sells its finished products and services (Shockley and Turner, 2014). A huge inventory is problematic to sales as it

ties down capital, for further investments, and this may negatively influence firm value but at the same time, an inventory that is too small may make it a challenge to generate sales, thereby reducing profitability. According to Mishra et al. (2013), it is better for an organisation to have a large inventory to minimise impacts of currency fluctuations, but not excess inventory, which increases cost of storage, and other inventory costs. Thus, proper inventory management solves both these problems, thereby contributing to profitability and increased organisational value.

Hypothesis 4: CCC is directly and significantly related to market to book value.

Lastly, cash conversion cycle, CCC, refers to the rate at which an organisation can convert its cash outflow, which begins when it pays for research and raw materials, into cash inflow, which happens when it sells finished services and products, from its daily operations. The underlying strength of CCC, as illustrated in section 2.3, is that it makes it possible to measure an organisation's efficiency using elements from both the balance sheet and cash flow statements, making it uniquely dynamic. The formula for representing cash conversion cycle can be given as the sum of account receivable and inventory periods less the account payable period. When there is poor management of working capital, CCC is bound to be longer, whereas the efficient management of the same leads to a shorter CCC, which directly leads to higher returns as more capital is quickly freed to cover long-term liabilities and investments. Further, Bei and Wijewardana (2012) argued that CCC is a measure of how aggressive or conservative the organisation's WCM is, whereby aggressive management focuses on quickly reinvesting available working capital to maximise profits, while conservative approach focuses on saving more capital to create a hedge against market risks, thereby limiting profitability. Either way, CCC has a direct impact on the two key factors that influence firm value, making it necessary to work towards achieving an optimal balance. Specifically, WCM strategy focused on improving profitability and firm performance ought to focus on reducing the account receivable period (ARP), inventory period (INP) but increase the account payable period (APP).

In total, four hypotheses are formulated for this study, labelled hypothesis 1 through hypothesis 4 as above. The hypothesis are all alternative hypotheses, with their null hypotheses implied. They are all used to design the research framework in the next section.

2.7. Research framework

As per the stakeholder theory, one of the key stakeholders to the company are shareholders and their interest is usually to see their wealth grow, which happens when the value of the organisation increases in the market. The managers' role to the shareholders is therefore optimizing the market share prices of the company. But a higher stock prices alone do not imply a high value in the market, since even within the same industry, companies producing nearly identical services may have vastly different stock prices. Many factors come into play, one of which is working capital. To study how WCM impacts firm value, the firm value construct, market to book value is taken as the dependent variable, while WCM constructs is taken as the independent variables. The research framework below illustrates this relationship.

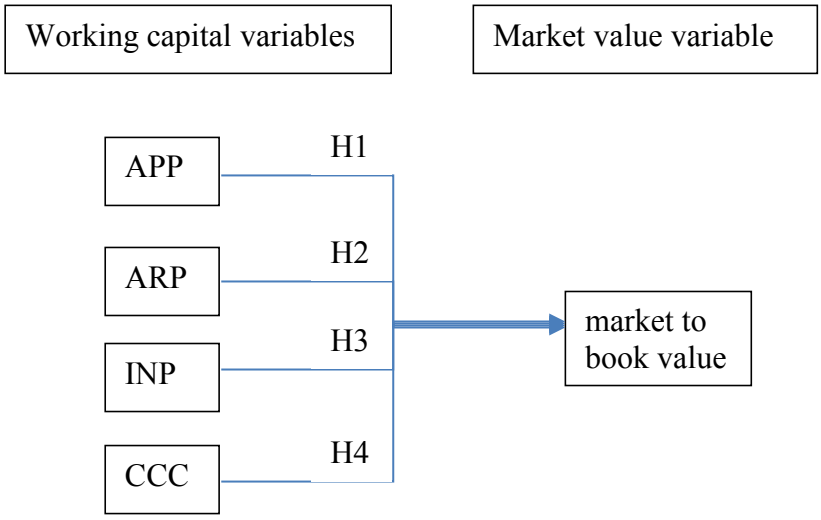

Figure 2.2: Research framework

CHAPTER 3: METHODOLOGY

This chapter presents the methodological approaches used in the study. Specifically, the chapter is divided into five parts that comprise research approach, research context, data collection, analysis as well as the process for verification of the findings. Saunders et al. (2009) points out that having a research methodology is important because it makes the study capable of being conducted within the guidelines and procedures set by academia. Not only that, because Enqvist, Graham and Nikkinen

(2014) add that having a clear breakdown of approaches and methods used in a study makes it possible for the readers to understand the context within which the study was made as well as factors to consider when attempting a similar study or critiquing and interpreting its findings and conclusions. As noted in chapter one, this study concerns the performance of stock value of listed companies and the case study is Indian stock market. However, it is imperative to note from the onset that the study research methods are guided by Finnish and international methodologies, as outlined within the Jyväskylän ammattikorkeakoulu university methodology guidelines.

3.1. Research approach

A research approach refers to the procedures that form the foundation of data collection in a study that show the assumptions and underpinning axioms of truth used by the researcher (Turner, Balmer & Coverdale, 2013). Yilmaz (2013) points out that the two main research approaches are inductive and deductive, where inductive is concerned with guiding studies focused on generating new theory, whereas deductive focuses on testing extant theories. Agreeably, Johnston (2014) adds that deductive approaches start from a general perspective and narrows down as the study continues, ending up with a conclusion that is applicable to specific contexts. By comparison, inductive approaches start from a specific problem and as the study continues, generalizations are made that may later be tested using the deductive approach. In the present case, funnel approach of deduction is adopted, as the goal is to test the theories using the hypotheses developed in chapter two as per the proposed research framework. By doing this, the study may be able to reach specific conclusions applicable to the Indian stock market.

Together with a research approach, research strategy is also a critical consideration for designing a methodology. Johnstone (2014) defines a research strategy as the set of plans that show the steps that ought to be followed in doing the research. Supporting this definition, Yilmaz (2013) further points out that there are three major strategies that researchers have to select from, which are surveys, case studies as well as experimental research. While surveys are focused on studying entire populations, such as the demographics of a country or region, case studies are mostly preferred when the study is involved with specific issues, sectors, companies or industries. On the other hand, experiments refer to a research strategy in which the study is done under controlled environments to imitate laboratory settings. In the present case, neither experimental research nor survey research was found to be suitable. However, Turner

et al. (2013) argue that the use of case studies is best where companies within one industry are being studied, which is the case in this study. Further, using a case study strategy is advantageous to the present case because, as shown in chapter one, the study focuses on specific case, which is the Indian stock market as discussed below.

3.2. Research context

The research context for this study is Indian stock market in general, and particularly the National Stock Exchange (NSE). Established in 1982, NSE became India's rival to the largest exchange in the country, Bombay Stock Exchange (BSE) and quickly rose in size and number of listed companies. As of 2019, it had a market capitalization of USD 2.27 trillion, with a total of 1,952 companies listed on it. It is the first demutualized electronic stock exchange in India, and also the first to use fully automated trading platform. This not only made it easier to trade, but also made it possible to have investors access the platform without having to be in Mumbai (NSE, 2019).

Headquartered in Mumbai, the exchange is headed by Vikram Limaye, the CEO and Managing Director. As of August 2019, NSE had 1952 companies listed, of which only 1,905 were available for trading, with 2,452 securities available for being traded (NSE, 2019). As of 2014, the listing had a trade volume of $420 billion, equivalent to ₹28,692 billion. The NSE created an index of its top 50 listed companies, called the NIFTY 50. Created in 1996, this index has grown in popularity to be used by both Indians and world economists (WFE, 2019). For this study, the companies to be analyzed were selected from the NIFTY 50. This index was selected as the ideal context for the study because it not only acts as a benchmark for India's stock market index, but also comprises the top performing companies across some 14 different sectors (NSE, 2017). These are: automobile, cement, chemicals, construction, consumer goods, energy-oil & gas, energy -power, food processing, IT, infrastructure, media and entertainment, metals, pharmaceuticals, and telecommunication. The banking and financial services sector is excluded since it has different working capital ratios from those of the other sectors.

3.3. Sampling and data collection

Sampling refers to the process through which the population is represented in a study, whereby a small selection is made to give a depiction of the entire population profile (Yin, 2003). Sampling is necessary when there is a challenge in collecting and

analyzing data from each single member of the population, whether they are objects, people or organisations. In the present case, sampling helps reduce the time and cost it would take to investigate the entire population of listed companies in the NSE. Agreeably, Silverman (2010) points out that the main sampling techniques available for researcher fall under probabilistic sampling, which relies on chance, and non-probabilistic sampling, which is based on choices made by the researcher. In this study, non-probabilistic sampling is used, and specifically, convenience sampling is preferred.

Convenience sampling refers to the use of samples that are both readily available, as well as accessible during the study (Saunders and Lewis, 2012). Omailr (2014) argues that using convenience sampling provides the researcher with the liberty to decide the samples to include in the study based on their own judgment, and is especially useful when there might be a challenge accessing some useful information integral to the study. In this case, the financial information is the most relevant aspect, and companies listed in the NSE will be selected based on the availability of the required financial data spanning five years from 2015 to 2019. Companies that have not been listed at any point within that period were excluded from the study. An initial sample of 50 companies was considered with at least three companies representing each of the 14 sectors. One company was then selected from each sector with the goal of having a total of 14 companies in the final sample, representing each sector listed in the NSE.

Cresswell and Cresswell (2017) suggests that there are two main data collection approaches, which are primary and secondary data. Primary data collection involves the collection of information from the source itself, whereas secondary data refers to the gathering of information from already published sources. While the major instruments of primary data collection are questionnaires and interviews, secondary data collection relies on existing libraries and databases, both online and offline. In the present case, the secondary data collection was deemed the most appropriate for use to complete the study. The choice of secondary data was based on two main factors. First, as Heale and Twycross (2015) rightly point out, the use of secondary studies makes it possible to use previously verified information, which reduces not only the cost but also the time of collecting primary data. Further, using secondary data makes it possible to use the findings of other studies, thereby reducing the subjectivity usually associated with primary data collection.

To collect data about these companies, the study relied on four main data sources, which include company annual reports, NSE stock reports, peer-reviewed journals as

well as relevant online sources on the subject. The use of these four sources for secondary research is supported by Huges and Sharrock (2016), who also noted that they are dependable and reliable since they are published by credible organisations and individuals. Following the recommendations of Bell, Bryman and Harley (2018), the study also collected data from recent publications, with the benchmark set at sources that were published within the past ten years, unless the source are seminal works of critical relevance to the study. Table 3.1 is a summary of the data collection sources and a summary of the data gathered from those sources.

Table 3.1: Summary of the data collection sources and types

Data type	Source of data	Location of data
Company financial performance	Company annual report	Company websites
Company stock value reports	NSE reports	NSE website
Theoretical approaches and conceptual definitions	Seminal works	Peer-reviewed journals
Past studies on company performance, stock value and WCM	Empirical literature	Peer-reviewed journals
Recent data trends on performance	Statistics databases	Statistics websites (World Bank, IMF, etc.)

The data collection process for company financial performance and stock value was completed by looking up the company's annual performance and value as reported on the company's and NSE's websites respectively. The data for the past four most recently available complete financial years were used for this purpose. However, where the data was not readily available, such as in the case of a company's working capital ratios, the data was calculated based on the formula for the ratio given as per the discussions in chapter two. Specifically, it was necessary to create a table of formulae from which all the necessary calculations would be done as shown in table 3.2 in the next section.

To collect the data for the theoretical concepts and definitions, Google search engine was used with key words the data over the period in question, with the result of each key word search refined using the process of elimination and inclusion criteria until the final set of references was obtained. Specifically, the search started from a general perspective with key words including:

"Working capital management" + "organisation performance" + "stock value performance" + "market to book value"

Various combinations of these searches produced millions of results. The exclusion criteria included sources from blogs, wikis, encyclopedias, opinion sites such as Quora, Reddit, and social media sites. Further, sources older than ten years were not considered in this study, and sources that failed to give a detailed process of data collection and analysis process were also filtered out. Because the resulting number of references was still huge with more than 30,000 references, sources that could not be accessed without paid online subscription were eliminated, as well as sources that did not provide abstracts. This reduced the sample size to within 5,000 ordered in terms of relevance.

The second step was using inclusion criteria as recommended by Blaxter, Huges and Tight (2011), who suggested that key considerations be made for the issues that are most relevant to the study. In this case, the abstracts were quickly reviewed to assess relevance, with studies that specifically focusing on the link between WCM and stock value performance being included. Further, the study also included studies that focused on WCM and firm financial performance as long as stock value was one of the measurement criteria for organizational performance. Several sources that were not reviewed but were consistently referred to by the selected sources were also included in the final literature pool. The final sample size after inclusion and exclusion criteria narrowed down to 176 peer-reviewed journal articles from reputable journals. All the sources used in the study were clearly cited and property referenced in APA as detailed in the reference section of this dissertation.

3.4. Data analysis

Silverman (2010) proposes the use of qualitative or quantitative analysis approaches depending on the type of data collected from the study. A qualitative approach focuses on the analysis of data that is non-numerical in nature, while quantitative data focuses on numerical information. The main difference between the two approaches is that the first is useful for analyzing data that requires depth, whereas the latter focuses on data that measures level of occurrence as well as degree of relationships. In the present case, quantitative technique was found to be the most appropriate for two reasons. The first is that the majority of the data collected was from annual reports and the stock exchange databases as mentioned in the section above, which produce a large numerical set of data. Secondly, the data collected was analyzed using quantitative

statistics because the focus was on understanding the degree to which the phenomena being studied was visible based on the data and the relationships between the observed variables.

Using the quantitative data approach, the study relied on mean analyses of the ratios defined in table 3.2 to provide descriptive statistics of the performance of the selected companies. Further, the study also used correlation to link the WCM ratios with performance ratios and answer the research objectives as stipulated in the first chapter of the study. The significance of using correlations is intimated by Collis and Hussey (2003) who argues that it is the most efficient method for indicating relationships for variables in a quantitative study. It is also important to note that the study used critical review to analyse the extant literature on the subject, which was also used to triangulate the findings from this study based on the earlier findings on the same subject.

Table 3.2: Variables and measurement of key constructs

Construct	Variables	Measurement
Working capital management	Accounts receivable period (ARP)	= (Account Receivables / sales) * 365
	Accounts payable period (APP)	= (Account Payables / purchase) * 365
	Inventory Turnover cycle (INV)	= (Average Inventory/ Cost of Goods sold)/ 365
	Cash conversion cycle (CCC)	= ARP + INV – APP
Firm stock value	market to book value (MBV)	= Market value of firm/Book value of Total Assets

3.5. Verification of the results

Silverman (2000) argues that it is pointless to conduct a study if the findings cannot be verified, the process is not reliable and the results cannot be replicated by future studies. Blaxter et al. (2011) agree with this conclusion, and argue that there are four key verification areas that out to be fulfilled if the study is to be considered verifiable. These include internal validity, exernal validity, reliability as well as objectivity of the data. First, internal validity seeks to confirm if the study successfully answers the

research objectives or questions it set out to answers, linking back to the theoretical framework (Venkatesh, Brown & Bala, 2013). The main advantage of achieving valid results is that it helps make it possible to assess the extent to which study objective have been achieved, therefore providing guidance to future studies as to what still needs to be done on the subject, or what new questions arise from the completion of the study. In this study, the objectives were used to design the research framework after careful and systematic review of literature, thereby proving for an organized set of variables within which to conduct the study. It is upon this research framework that the data collected and analysis process is anchored, thereby helping achieve internal validity. Further, all the emerging gaps that are observed after the study are noted down keenly, with a recommendation for future researchers highlighting the key issues.

Another issue of significance to this study is external validity, which Blumberg, Cooper and Schindler (2005) define as the extent to which the findings of one study can be made to apply in general to other cases within the industry or topic area. The applicability of any study conclusions are often dependent in issues such as place, time, population and the topic in question, as the closer the study is to the population the sample represented, the more valid the findings will be when applied broadly (Wisdom et al., 2012). Johnstone (2014) argues that the most effective ways of achieving this are through using adequate but also well-representative samples where the entire population cannot be surveyed, while also justifying the selected approaches to sampling. This was achieved in this study through the use of convenience sampling and restriction of the study to within the NSE, making the data broadly relevant for the Indian stock market.

On the issue of reliability, Engberg and Berben (2012) raise the questions: is it possible for another researcher to repeat the study? Are the study sources both reliable and varied? Since this study was done following a standard procedure as prescribed both by the JAMK university guidelines as well as international standards for writing a dissertation, each step is duly noted and each reference is clearly cited and referenced. Further, by using APA referencing style, care has been taken to ensure that the cited literature cannot only be seen in an alphabetically organized list, but that they can also be readily retrieved with a search of online databases. Further, the key findings were corroborated with extant literature to find out how they compare, thereby providing the much-needed triangulation of the study findings to eliminate researcher bias. The data collection techniques used in this study, including search

engine and online database querying, as well as the analysis methods such as financial statement analysis, ratio analysis, correlation and regression analysis, were all done based on the guidance of scholars in the field such as Saunders et al. (2009) and with the aid of software such as Excel and SPSS, thus ensuring the correct use of the techniques.

CHAPTER 4: FINDINGS

4.1 Introduction

This chapter discusses the findings of the study. It analyses the descriptive statistics of the dependent variables and the independent variables. It also uses correlation analysis to assess the strength and direction of the relationship between market to book value and the working capital management variables. The final section of this chapter discusses the relationship between market to book value and the working capital management variables based on the correlation analysis. It also highlights the implications of the findings and links the findings to those of similar previous empirical studies.

4.2 Descriptive Statistics

The descriptive statistics used in this analysis are mean, maximum, minimum, and standard deviation. Mean is a central measure that indicates that average working capital performance of the 14 companies. Maximum, mean and standard deviation indicate the variability of the working capital policies among the 14 companies. The mean market to book value is 398 implying that on average, the market value of the 14 companies was 398 times the book value of assets. The maximum and minimum values of market to book value are 2,878.56 and 22.3989 respectively, while the standard deviation is 585 as shown in Table 4.2. The large difference between the maximum and minimum suggests that there is a greater variability in the market valuation of the 14 Indian companies.

The descriptive statistics further indicate significant variations in WCM policies of the 14 companies. The minimum accounts receivable period is 3 days while the maximum is 242 days. The statistics for inventory turnover cycle indicates that a company took less than one day to replenish its inventories, while another company took approximately 400 days. The lowest cash conversion cycle was -105 days while the longest was 331 days. The large variability in working capital ratios can be explained

by the fact the companies are drawn from different sectors. This confirms the findings by Imran and Housheen (2010) that the sector in which a firm operates influences its working capital management policies. Companies dealing with fast-moving items such as consumers goods tend to have shorter inventory turnover cycles than those in sectors such as construction.

Table 4.2: Descriptive Statistics

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
Accounts receivable period	70	.0000	242.8211	51.713659	55.5908932
Accounts payable period	61	33.7597	246.2116	108.459985	55.8946055
Inventory Turnover cycle	70	.0119	404.8731	89.094550	76.0957856
Cash conversion cycle	61	-105.0045	331.2181	40.588969	99.8148825
Market to Book Value	70	22.3989	2878.5617	398.405594	585.0105458
Valid N (listwise)	61				

4.3 Correlation Analysis

This section uses Pearson correlation coefficient to assess the nature and strength of association between market to book value and the WCM ratios. To determine if the correlations are significant, significance (hypothesis) tests were conducted at 5% significance level. Specifically, he Correlation between Market to Book Value and ARP, APP, INV and CCC are assessed.

Table 4.3.1: Correlation Coefficient of MBV and ARP

Correlations

		Market to Book Value	Accounts receivable period
Market to Book Value	Pearson Correlation	1	-.192
	Sig. (2-tailed)		.111
	N	70	70

The correlation coefficient between market to book value and accounts receivable period is -0.192. This implies that there is a weak negative association between the two variables. The significance value is 0.111, which is less than 0.05, implying that the correlation between the two is not significant.

The coefficient of correlation between market to book value and accounts payable period is -0.147, suggesting a weak negative relationship between the two variables. The significance value for the coefficient is 0.259. This is greater than 5%, indicating that there is no significant correlation between the two variables.

Table 4.3.2: Correlation Coefficient of MBV and APP

Correlations

		Market to Book Value	Accounts payable period
Market to Book Value	Pearson Correlation	1	-.147
	Sig. (2-tailed)		.259
	N	70	61

The Pearson's correlation coefficient between market to boo value and inventory turnover cycle is 0.029 as shown in Table 4.3.3. It implies that there is a weak positive association between the two variables. The significance value of the coefficient (0.814) is more than 0.05, meaning that there is no significant correlation between market to boom value and INV.

Table 4.3.3: Correlation Coefficient of MBV and INV

Correlations

		Market to Book Value	Inventory Turnover cycle
Market to Book Value	Pearson Correlation	1	.029
	Sig. (2-tailed)		.814
	N	70	70

The coefficient of correlation between market to book value and cash conversion is -0.058, suggesting a weak negative relationship between the variables. The significance value is 0.658. This is greater than 0.05, implying that the correlation between market to book value and CCC is not statistically significant. Thus, correlation analysis suggests that WCM has no significant relationship with the market value of the 14 Indian companies.

Table 4.3.4: Correlation Coefficient of MBV and CCC

Correlations

		Market to Book Value	Cash conversion cycle
Market to Book Value	Pearson Correlation	1	-.058
	Sig. (2-tailed)		.658
	N	70	61
Cash conversion cycle	Pearson Correlation	-.058	1
	Sig. (2-tailed)	.658	
	N	61	61

4.4 Summary

This chapter presented the findings of the analysis conducted to assess the relationship between market to book value and WCM ratios (ARP, INV, APP, and CCC). The correlation analysis showed that there is no significant association between all the four WCM variables. The results indicate that market to book value has negative associations with APP, ARP, and CCC, but a positive association with INV. However, all the relationships are not statistically significant. This implies that working capital management does not have a significant effect on the market value of Indian companies. The findings contradict previous studies which determined that WCM significantly influence the market value of companies. Ogundipe, et al. (2012) determined that CCC has a significant negative relationship with market to book value of Nigerian listed companies. NorEdi and Noriza (2010) also found a negative association between CCC and market to book value of Malaysian companies.

Chapter 5: Conclusions and recommendations

5.1. Summary

This study was focused on working capital management and how it influences the market value of Indian companies. This study was influenced by the idea that working capital provides the required liquidity to run the daily operations of an organisation, which implies that without it, the organisation's ability to operate will be immediately and severely hampered. The study focused on the extent to which WCM can influence the value of the organisation, and it was seen that there was a gap in literature due to inconsistencies of past findings as well as insufficient literature on the subject in the case of Indian financial market. With India being the world's 5th largest economy and having some 7,800 listed companies, the Indian stock market is important and

understanding how its market value is affected by issues like WCM is a relevant research interest. This formed the premise of the study aim, which was to determine the impacts that WCM has on the stock market performance of Indian companies.

The literature shows that working capital is defined variously, but the definition by Akinlo (2011) was found to be most suitable, which conceptualizes the term as a metric which shows the extent to which an organisation is liquid, usually by comparing current assets and current liabilities. Akinlo (2012) further gave a useful definition of WCM as the planning and control of current assets and liabilities in an organisation through a balanced minimization of fixed assets expenditure and maximization of cash inflows. The stock market value used in this study was conceptualized as both the perceived worth of the market in which securities are traded. Thus, an organisation's stock market value is perceived value of an organisation traded in that market, and this is directly attributed to by the price of tradable shares of that organisation. From this perspective, any discussion of how WCM influence stock market value therefore becomes a discussion of how WCM influences the share price of an organisation.

Various theories were found to explain the influence of WCM on the decisions of managers as well as the value of an organisation, including the resource-based theory of the firm, operating cycle theory, cash conversion cycle theory, risk and return theory as well as the agency or stakeholder theory. All these theories were found to contribute to the value of the firm, but CCC theory was the most relevant for the present study. This is because, unlike the other theories, CCC combines the strengths of the above theories, while also dealing with their major weakness, which is to explain WCM by considering all its components. Further, CCC introduces the concept of cash cycles, with the premise that the process of cash inflow, cash transformation into a product or service, and cash outflow is a continuous rather than a static one (Aminu, 2015).

Before looking at WCM impacts the value of an organisation, factors that influence CWM itself were discussed, and it was found that the main ones were which include size, industry practice, share of the market, nature of the business, and the market environment and current assets (Gill and Biger 2013; Moradi, 2012). Understanding the factors that influence WCM is important because, according to Oladipupo and Okafor (2013), different organisations need different amounts and management styles of their working capital, and what works for one organisation may not necessarily work for the next organisation. On the other hand, measuring working capital is not

different among companies. Instead, the methodology evolves with time, and according to Kemisola (2014), it has moved from traditional techniques of using ratios, to dynamic techniques that use cycles. It is for this reason that WCM was measured using CCC which various studies have found to be efficient.

Similarly, measuring stock market value has been done differently and by relying on various methods, including discounted cash flows, dividends, cash flows, earnings per share, earnings ratio, and even growth rate of the company (Bond and Cummings, 2004; Pilkington, 2017). Other models include capital structure substitution theory and price-earnings growth rate. The main distinction between different methods is that some use market value, while others use company vale. It was found that different approaches have their strengths and weaknesses, and to minimize the same, the study focused relied on a dual approach that combined approach, which combined the market criteria and the fundamental criteria (company value). To this end, the measure used was market to book value, derived from Tobin's q as per Akram and colleagues (2016).

5.2. Conclusions

The conclusions of this study are guided by the research objectives. The first objective was to analyse the extent of working capital in the total structure of the sample firms. It was found that working capital practices used by the listed Indian companies are similar to those used by most listed companies in other major markets. Specifically, it was found that companies which operate in fast moving goods sectors such as home products retail, often have shorter inventory compared to companies in slow-moving goods like construction. As documented by Imran and Housheen (2010), this is also the case with firms in other markets.

The second objective was to analyse the impacts of various financial ratios derived from working capital on the stock market performance. To fulfil this aim, four hypotheses were tested. The first hypothesis stated that ARP directly and significantly impacts market to book value. From the study findings, it was concluded that there is a weak negative correlation between market to book value and ARP. Thus, this hypothesis is rejected, and the null hypothesis holds. The second hypothesis stated that there is a direct and significant relationship between APP and market to book value. The findings show that there is a weak negative correlation between market to book value and APP. Thus, the second hypothesis is rejected. The third hypothesis stated

that INV directly and significantly influences market to book value. From the findings, it was found that the correlation between market to book value and INV is weak but positive, hence the hypothesis is confirmed. Lastly, the fourth hypothesis stipulated that CCC is directly and significantly related to market to book value. From the findings, it was shown that there is a weak negative correlation between these variables, thereby rejecting the alternative hypothesis.

The findings of this study contradict serval studies, including Salawi (2007), Nazir and Afza (2009), Palani and Mohiden (2012), and Akram, et al. (2016). All these researchers found that there is a positive and direct link between WCM measures indicated above and the market value of a firm. However, the findings also confirm the studies by several other researchers, including Jagongo and Makori (2013) Ogundipe, at al (2012), and NorEdi and Noriza (2010). What this means is that WCM and market value of the organisation may be positively related in some cases, but negatively related in other cases. However, considering the extent of this study, it appears that the WCM practices in Indian companies lead to negative association between WCM and market value of the firm.

5.3. Recommendations

The first recommendation is that Indian companies should consider lowering their account receivables period. The shorter they take to receive their money from outside, the more working capital the organisation will have.

Secondly, organisations should also consider increasing their accounts payable period. This is because, having a longer time gives the organisation a longer time to use the money they owe before making payments.

Thirdly, organisations should consider increasing their inventory turnover cycle. This makes it possible to process more inventory within a given period, which in turn increases cash flow.

Overall, however, there is need for balancing how the organisation makes and decisions because, as it has been shown, what works for one organisation may fail to work for another organisation in a different industry.

5.4. Limitations to the study and recommendations for future research

Of interest to this study is that all the WCM variables were found to have a statistically insignificant correlation with market to book value, and this implies that

the data in the study was insufficient to produce significant results. As a recommendation for future research, it is suggested that a larger sample size be used to study the Indian companies and how WCM influences their valuation.

References

Ademola, O.J. and Kemisola, O.C. (2014). The Effect of Working Capital Management on Market Value of Quoted Food and Beverages Manufacturing Firms in Nigeria. *International Journal of Business and Social Science* 5(8), 168-177.

Afza, T., & Nazir, M. S. (2007). Working Capital Approaches and Firm's Returns. *Pakistan Journal of Commerce and Social Sciences, 1(1), 25-36.*

Afza, T., & Nazir, M. S. (2009). Impact of Aggressive Working Capital Management Policy on Firms' Profitability. *The IUP Journal of Applied Finance, 15(8), 20-30.*

Akinlo, O. (2011). The Effect of Working Capital on Profitability of Firms in Nigeria: Evidence from General Method of Moments (GMM). *Asian Journal of Business and Management Sciences*, Vol. 1, No. 2, pp. 130-135.

Akinlo, O. (2012). Effect of Working Capital on Profitability of Selected Quoted Firms in Nigeria. *Global Business Review,* Vol.13, No.3, pp. 367–381.

Akram, M., Jamil, S. & Ali, S.N. (2016) Impact of Working Capital Management on Market Return a Case of Pakistan Chemical Sector. Journal of Business and Management, Volume 18, 5(1), pp. 91-98.

Alipour, M. (2011). Working Capital Management and Corporate Profitability: Evidence from Iran. W*orld Applied Sciences Journal, 12 (7), 1093-1099*.

Al-Shubiri, F. N. (2011). The effect of working capital practices on risk management: Evidence from Jordan. Global Journal of Business Research, 5(1), 39-54.

Aminu, Y. (2015) A Review of Anatomy of Working Capital Management Theories and the Relevant Linkages to Working Capital Components: A Theoretical Building Approach, European Journal of Business and Management, 7(2), pp. 10-18.

Aminu, Y. (2015). A Review of Anatomy of Working Capital Management Theories and the Relevant Linkages to Working Capital Components: A Theoretical Building Approach. European Journal of Business and Management, V(2), pp. 10-18.

Ashraf, C. K. (2012). "The Relationship between Working Capital Efficiency and Profitability".*Journal of Accounting and Management* , 25.

Baronov, D. (2015). *Conceptual foundations of social research methods*. New York, MA: Routledge.

Bell, E., Bryman, A., & Harley, B. (2018). *Business research methods*. Oxford university press.

Bieniasz and Golas 2011,

Blanchard, Olivier; Rhee, C. & Summers, L. (1993). "The Stock Market, Profit, and Investment". Quarterly Journal of Economics. 108 (1): 115–136.

Blaxter, L., Hughes, C. and Tight, M. (2011). *How to Research,* 4th edition. United Kingdom, UK: Open University Press

Blumberg B., Cooper D. R., & Schindler P. S. (2005). *Business Research Methods*. Mc Graw Hill: Berkshir

Bond, Stephen R.; Cummins, Jason G. (2004). "Uncertainty and Investment: An Empirical Investigation Using Data on Analysts' Profits Forecasts". FEDS Working Paper No. 2004-20

BSE (2009) BSE-Introduction. Retrieved from http://www.bseindia.com/static/about/introduction.aspx?expandable=0

BSE (2019) BSE - Equity Market Capitalisation. Retrieved from https://www.bseindia.com/markets/keystatics/Keystat_maktcap.aspx

Chan, Kam C.; Gup, Benton E.; Pan, Ming-Shiun (2003). "International Stock Market Efficiency and Integration: A Study of Eighteen Nations". Journal of Business Finance & Accounting. 24 (6): 803–813.

Chandrasekhar, C.P., Mallick, S. and Akriti, A. (2011). *The elusive retail investor: How deep can (and should) India's stock markets be?* (PDF). SEBI. 2011

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.*

CIA World Fact Book. (2017). India. Retrieved from https://www.cia.gov/library/publications/the-world-factbook/geos/in.html

Collis, J. and Hussey, R. (2003). *Business Research: a practical guide for undergraduate and postgraduate students*. Basingstoke: Palgrave Macmillan.

Corley, K. G., & Gioia, D. A. (2011). Building Theory about Theory Building; What constitutes a Theoretical Contribution? *Academy of Management Review, 36(1), 12-32.*

Creswell, J. W., & Creswell, J. D. (2017). *Research design: Qualitative, quantitative, and mixed methods approach*. Manchester: Sage publications.

Damodaran A (2002). Investment valuation: Tools and techniques for determining the value of any asset valuation (Google Book Search). New York: Wiley

Deloof, M. (2003). Does Working Capital Management Affect Profitability of Belgian Firms? Journal of Business, Finance and Accounting, 30(3&4), 573-587

Ebenezer, A. & Asiedu, K. M. (2013). Working capital. *International Journal of Business and Social Research* (IJBSR), Volume -3, No.-2,

Engberg, S., & Berben, L. (2012). Selecting instruments: Reliability and validity considerations. *Journal of Wound Ostomy & Continence Nursing*, *39*, 18-20. doi:10.1097/WON.0b013e3182400d7f

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. doi:10.1016/j.ribaf.2014.03.005

Enyi, P. (2006). Exploring alternative Approach to Solvency Management. Babcock J. Manage. Soc. Sci.,1(7).

Fortune (2019) Global 500 – 2019. Retrieved from https://fortune.com/global500/2019/

Gill, A., & Biger, N. (2013). The impact of corporate governance on working capital management efficiency of American manufacturing firms. *Managerial Finance, 39*, 116-132. doi:10.1108/03074351311293981

Hawksworth, J. & Tiwari, A. (2011). *The World in 2050: The Accelerating Shift of Global Economic Power: Challenges and Opportunities*. Retrieved from http://www.pwc.com/en_GX/gx/psrc/pdf/world_in_2050_jan2011.pdf

Heale and Twycross (2015). *Validity and reliability in quantitative studies. Evidence Based Nursing, 18(3),* 66-67.

Hughes, J. A., & Sharrock, W. W. (2016). *The philosophy of social research*. New York, MA: Routledge.

Hundal, S. (2015). *Economic Value Added (EVA), Agency Costs and Firm Performance: Theoretical Insights through the Value Based Management (VBM) Framework.* Finnish Business Review. Published 21.5.2015.

Hundal, S. (2016). Busyness of audit committee directors and quality of financial information in India. *International Journal of Business Governance and Ethics,* 11 (4), 335-363.

Hundal, S., Sandstrom, A. & Uskumbayeva, A. (2018). The Impact of the Financial Crisis on Corporate Capital Structure Dynamics in the Nordic Countries. *Eurasian Journal of Economics and Finance, 6*(3), 34- 51.

IMF. (2019). World Economic Outlook Database, April 2019". Retrieved from https://www.imf.org/external/pubs/ft/weo/2019/01/weodata/weorept.aspx?pr.x=39&pr.

y=17&sy=2017&ey=2021&scsm=1&ssd=1&sort=country&ds=.&br=1&c=534&s=NGDPD%2CPPPGDP%2CNGDPDPC%2CPPPPC&grp=0&a=

Imran, O.C. & Nousheen, A.N. (2010). Relationship between efficiency level of working capital management and profitability of firms in the textile sector of Pakistan. Indus Journal of Management and Social Sciences, 4 (1), 30-42.

Izadi Niya, N, and Taaki, A. (2010). Examining the impact of working capital management on the profitability of the Tehran listed firms. *Financial Accounting Journal*, 2(5). pp 120-139.

Jagongo, A. O., & Makori, D. M. (2013). Working Capital Management and Firm Profitability: Empirical Evidence from Manufacturing and Construction Firms Listed on

Nairobi S ecurities Exchange, Kenya.

Jalan, B. (2010). *Jalan Committee report 2010 - Review of Ownership andGovernance of Market Infrastructure Institutions* (PDF). Mumbai: SEBI.

Johnston, M. P. (2014). Secondary data analysis: A method of which the time has come. *Qualitative and Quantitative Methods in Libraries, 3,* 619-626.

Library of Congress, Federal Research Division (2011). *FINANCIAL LITERACY AMONG RETAIL INVESTORS IN THE UNITED STATES* (PDF). Washington DC: SEC / The library of congress. 2011

Muhammad, A, & Syed, I. H. (2011). Impact of Working Capital Management on Firms‟ Performance: Evidence from Non-Financial Institutions of KSE-30 indexes, *Interdisciplinary Journal of Contemporary Research in Business,* 3, 8, pp. 136-143.

Mukherji, A., Desai, A.B. & Wright, P. (2008). A contingent relationship between risk and return: Towards a behavioural model of decision making. Institute of Behavioural and Applied Management.

National Economic Debates. (2011)"National economic debate - Stock markets or rigged casinos - talk by Professor Dr. R. Vaidyanathan (IIM Bangalore) - 21 Jan 2011, Mumbai. Retrieved from https://www.youtube.com/

Nazir, M. S., & Afza, T. (2009). Impact of aggressive working capital management policy on

firms' profitability. *IUP Journal of Applied Finance*, *15*(8), 19.

Nazir, M. S., & Afza, T. (2009). Impact of aggressive working capital management policy on firms' profitability. *IUP Journal of Applied Finance*, *15*(8), 19

NorEdi, A. B. M. & Noriza, B. M. S. (2010). Working capital management: The effect of market valuation and profitability in Malaysia. *International Journal of Business and Management*, 5(11), 140-147.

NSE (2017). *Broadmarket indices - NIFTY 50 Index*. Retrieved from https://nseindia.com/products/content/equities/indices/nifty_50.htm

NSE (2019) *Business growth in CM Segment.* Retrieved from https://www.nseindia.com/products/content/equities/equities/historical_equity_businessgrowth.htm

Ogundipe, S., Idowu, A. & Ogundipe, L. (2012). "Working Capital Management, Firms" Performance and Market Valuation in Nigeria", *International Journal of Social and Human Sciences*,6, pp. 143-147, 2012.

Oladipupo, A. O., & Okafor, C. A. (2013). Relative contribution of working capital management to corporate profitability and dividend payout ratio: Evidence from Nigeria. *International Journal of Business and Finance Research*, *3*(2), 11-20.

Omair, A. (2014). Sample size estimation and sampling techniques for selecting a representative sample. *Journal of Health Specialities*, 2(4), pp. 142-147. S

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.

Pilkington, P (2017). The Reformation in Economics: A Deconstruction and Reconstruction of Economic Theory. Palgrave Macmillan.

Pong, K. M., & Mitchell, F. (2012). Inventory investment & control: How have UK companies been doing? *The British Accounting Review, 44*, 173-188. doi:10.1016/j.bar.2012.07.008

Population Division. (2017). United Nations Department of Economic and Social Affairs, Retrieved from https://en.wikipedia.org/wiki/United_Nations_Department_of_Economic_and_Social_Affairs

Pouraghajan, A., & Emamgholipourarchi, M. (2012). Impact of Working Capital Management on Profitability and Market Evaluation: Evidence from Tehran Stock Exchange. *International Journal of Business and Social Science,* 3(10), pp. 93-98.

Ramachandran, J. & Janakiraman, M. (2009). The relationship between working capital management efficiency and EBIT. Managing Global Transitions,7(1), 61-74

Rawal, P. (2015). *Indian Stock Market and Investors Strategy*. Retrieved from https://books.google.com/books?id=xLsoCAAAQBAJ&pg=PA12

Richards, A. B., Stewart, C. M.,& Franklin, A.(2008*). Principles of Corporate Finance.(9th ed.), New York, Wiley and sons*

Richards, V.D. & Laughhin, E.J. (1980). A cash conversion cycle approach to liquidity analysis. *Financial management, 9 (1), 32-38.*

Sanger, J. (2011), *Essential of working capital management*. New Jersey: John Wiley & Sons. 1st edition.

Sathyamoorthy and Wally-Dima 2008,

Saunders, M., & Lewis, P. (2012). *Doing research in business and management: An essential guide to planning your project*. London : Financial Times Prentice Hall.

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.

Shehzad, F., Ahmed, K., Sehrish, S., Saleem, F., & Yasir, M. (2012). The relationship between working capital management efficiency and ebit: evidence from textile sector of Pakistan. *Interdisciplinary journal of contemporary research in business*, *4*(5), 211-224.

Siegel, Laurence B. (2010). "Black Swan or Black Turkey? The State of Economic Knowledge and the Crash of 2007–2009". Financial Analysts Journal. 66 (4): 6–10.

Silverman, D. Ed. (2010). *Doing Qualitative Research: Theory, method, and practice*, 3rd edition, Manchester: Sage.

Singh, K. & Asress, F. C. (2011). Determining working capital solvency level and its effect on profitability in selected Indian manufacturing firms. *International Journal of Research in Commerce, Economics & Management,* 1(2), 52-57.

Talha, M., Christopher, S. B., & Kamalavalli, A. L. (2010). Sensitivity of profitability to

working capital management: a study of Indian corporate hospitals. *International Journal of Managerial and Financial Accounting*, *2*(3), 213-227.

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.

The World Bank. (2019) "Market capitalization of listed domestic companies (current US$)". Retrieved from https://data.worldbank.org/indicator/cm.mkt.lcap.cd

Thukral, A. (2018). For those who do not make much money in stocks, here's the catch. Retrieved from https://economictimes.indiatimes.com/markets/stocks/news/for-

those-who-do-not-make-much-money-in-stocks-heres-the-catch/articleshow/63891555.cms

Tiegen, H.K. & Brun, W. (1997). *Anticipating the future: Appraising risk and uncertainty*. routledge Dress, New York. U.S.A.

Turner, T. L., Balmer, D. F., & Coverdale, J. H. (2013). Methodologies and study designs relevant to medical education research. *International Review of Psychiatry, 25,* 301-310. doi:10.3109/09540261.2013.790310

Usama, M. (2012). Working capital management and its effect on firm's profitability and liquidity: In other food sector of (KSE) Karachi stock exchange. *Arabian Journal of Business and Management Review (Oman Chapter)*, *1*(12), 62.

Usama, M. (2012). Working capital management and its effect on firm's profitability and liquidity: In other food sector of (KSE) Karachi stock exchange. *Arabian Journal of Business and Management Review (Oman Chapter)*, *1*(12), 62.

Venkatesh, V., Brown, S. A., & Bala, H. (2013). Bridging the qualitative-quantitative divide: Guidelines for conducting mixed methods research in information systems. *MIS Quarterly, 37,* 21-54.

Ventura, L. (2019) World's largest companies 2019 Retrieved from https://www.gfmag.com/global-data/economic-data/largest-companies

WFE (2012) WFE 2012 Market Highlights_Retrieved from http://www.world-exchanges.org/files/statistics/2012 WFE Market Highlights.pdf

WFE (2015) WFE Full Year Statistics 2015. Retrieved from http://www.world-exchanges.org/home/index.php/news/world-exchange-news/wfe-full-year-statistics-show-2015-global-equity-trading-volumes-rise-55-as-volatility-boosts-activity

WFE (2018) WFE Report Generator including report for Domestic Market Capitalization 2008 Retrieved from http://www.world-exchanges.org/WFE/home.asp?menu=395

WFE (2019) *Monthly reports.* Retrieved from https://www.world-exchanges.org/home/index.php/monthly-reports-tool

WFE. (2018). Monthly Reports - World Federation of Exchanges. Retrieved from https://www.world-exchanges.org/home/index.php/monthly-reports-tool

Wisdom, J. P., Cavaleri, M. A., Onwuegbuzie, A. J., & Green, C. A. (2012). Methodological reporting in qualitative, quantitative, and mixed methods health services research articles. *Health Services Research, 47*, 721-745 doi:10.1111/j.1475-6773.2011.01344.x

Witkowski, W. (2018) Microsoft surpasses Apple as most valuable U.S. company. Retrieved from marketwatch.com/story/microsoft-surpasses-apple-as-most-valuable-us-company-2018-11-30

World bank 2019,

Yahoo Finance (2019a) Microsoft Corporation (MSFT). Retrieved from https://finance.yahoo.com/quote/MSFT?p=MSFT

Yahoo Finance (2019b) Apple Inc. (AAPL). Retrieved from https://finance.yahoo.com/quote/AAPL/

Yilmaz, K. (2013). Comparison of quantitative and qualitative research traditions: Epistemological, theoretical, and methodological differences. European Journal of Education, 48, 311-325. doi:10.1111/ejed.12014

Yin (2003). *Case Study Research: Design and Methods*: Applied Social Research Methods. CA. Sage.

Appendices

Appendix 1. List of Indian Companies

Sr. No.	Company Name	Stock Code	Sector
1.	Tata Motors.	TATAMTRDVR	Automobile
2.	UltraTech Cement Ltd.	ULTRACEMCO	Cements
3.	United Phosphorus Ltd.	UPL	Chemicals
4.	Larsen & Toubro Ltd.	L&T	Construction
5.	Britannia Industries Ltd.	BRITANNIA	Consumer Goods
6.	Reliance Industries Ltd.	RELIANCE	Energy-Oil and Gas
7.	NTPC Ltd.	NTPC	Energy-Power
8.	Nestle India Ltd.	NESTLEIND	Food Processing
9.	Tech Mahindra Ltd.	TECHM	Information Technology
10.	Adani Ports & Special Economic Zone Ltd.	ADANIPORTS	Infrastructure
11.	Zee Entertainment Enterprises Ltd.	ZEEL	Media and Entertainment
12.	Hindalco Industries Ltd.	HINDALCO	Metals
13.	Sun Pharmaceutical Industries Ltd.	SUNPHARMA	Pharmaceutical
14.	Bharti Airtel Ltd.	BHARTIARTL	Telecommunication