

**KWAME NKRUMAH UNIVERSITY OF SCIENCE AND  
TECHNOLOGY, KUMASI**

**EFFECT OF EFFICIENCY ON FIRMS' VALUE: EVIDENCE  
FROM MANUFACTURING FIRMS**

**BY**

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**A THESIS SUBMITTED TO THE DEPARTMENT OF ACCOUNTING AND  
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MASTER OF SCIENCE IN ACCOUNTING AND FINANCE**

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## DECLARATION

I hereby declare that this submission is my own work towards the award of the MSc Accounting and Finance and that, to the best of my knowledge, it contains no material previously by another person or any material which has been accepted for the award of any other degree of the University, except where due acknowledgement has been made in the text.

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## DEDICATION

I dedicate this thesis to my Omniscient Father in Heaven whose unmerited grace was sufficient to see me through this research work.

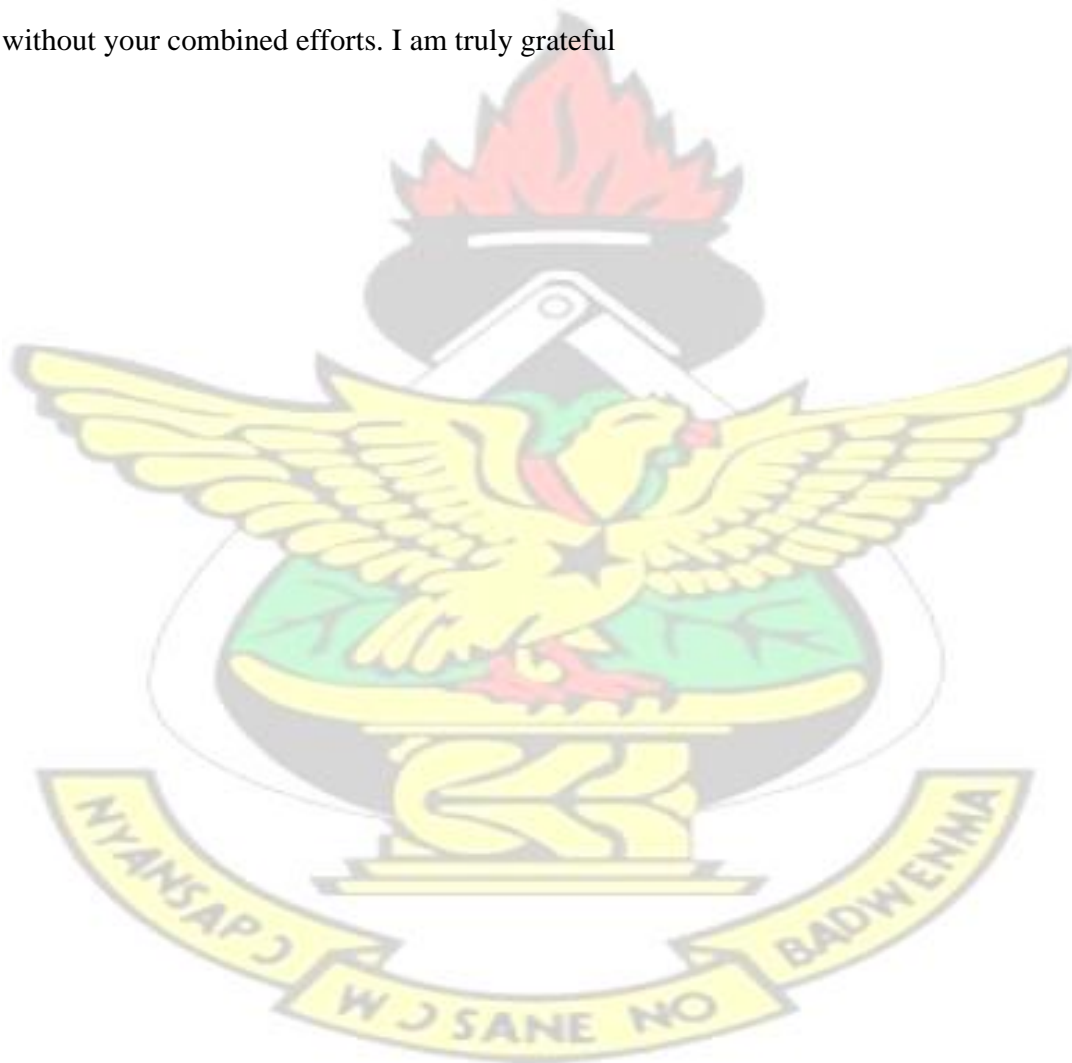
Secondly, this research work is dedicated to my wife and children for their support and encouragement during the entire period of study.



## ACKNOWLEDGMENT

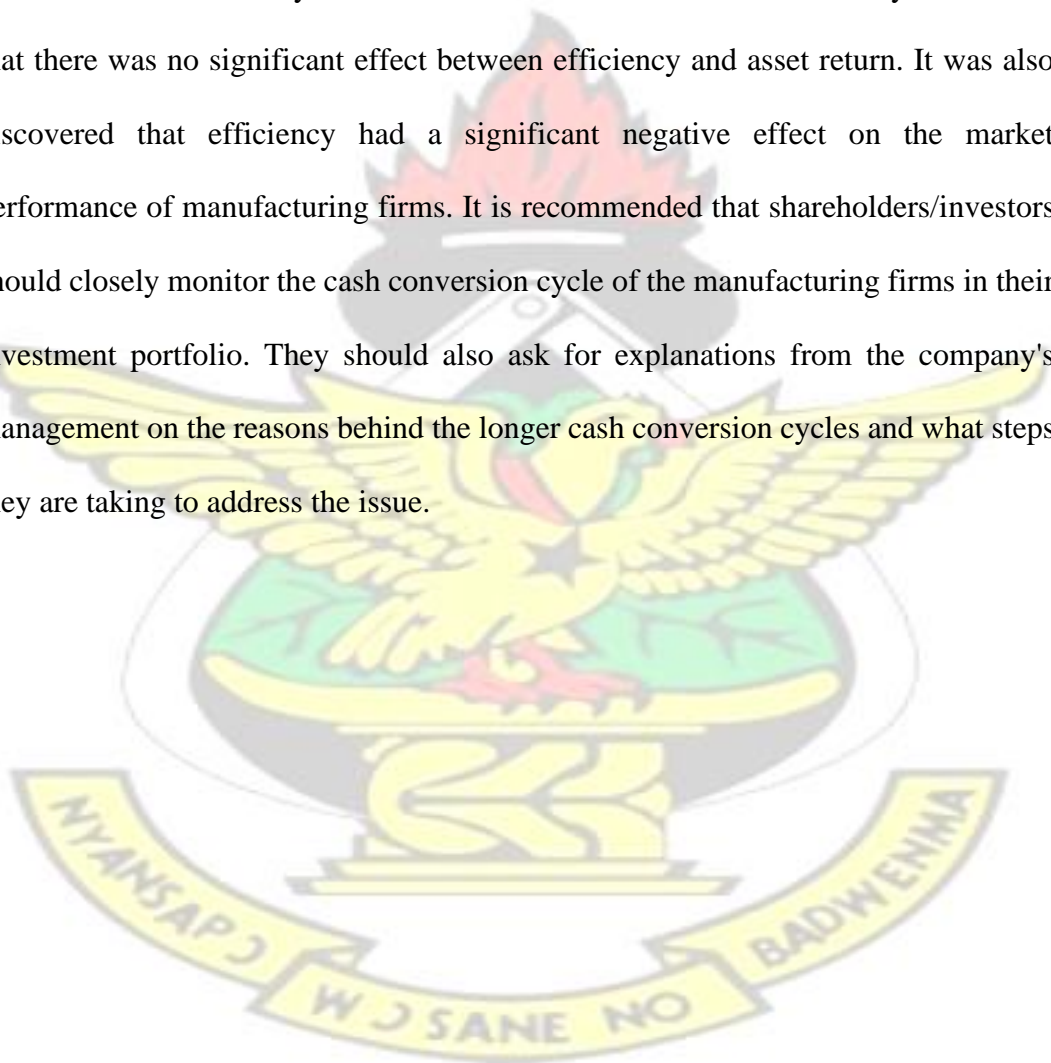
I am eternally grateful for the invaluable professional guidance from my supervisor; Dr. Joseph Oscar Akotey while writing this thesis. I am also indebted to my wife and Children for the critical emotional support they offered me during the entire academic period.

I also wish to thank my classmates and friends, especially Mr Frank Acquah and Daniel Appiah-Otoo who stood by me during the study. This thesis would not have been possible without your combined efforts. I am truly grateful



## ABSTRACT

The study examined the effect of efficiency on the firm value of manufacturing firms. The study design was explanatory. The study sampled 12 manufacturing firms from 2010 to 2021. The data was analysed descriptively and quantitatively using panel regression. The study found that most of the manufacturing firms covered under the study have positive cash conversion cycle suggesting that it takes longer for the firms to convert their inventory and account receivables into cash. The study also found that there was no significant effect between efficiency and asset return. It was also discovered that efficiency had a significant negative effect on the market performance of manufacturing firms. It is recommended that shareholders/investors should closely monitor the cash conversion cycle of the manufacturing firms in their investment portfolio. They should also ask for explanations from the company's management on the reasons behind the longer cash conversion cycles and what steps they are taking to address the issue.



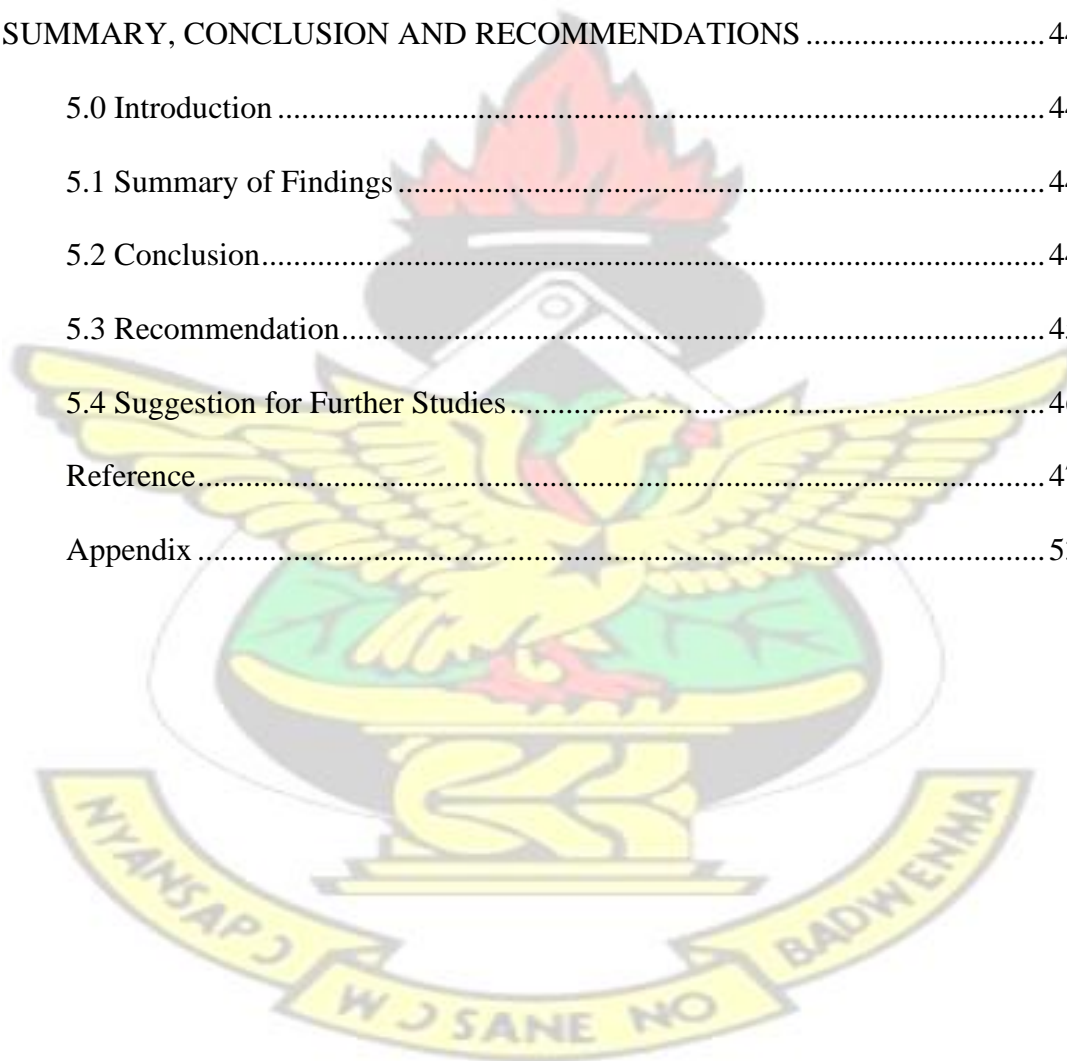
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## CHAPTER ONE

### INTRODUCTION

#### 1.0 Background of the Study

In today's hyper-competitive business environment, where companies are constantly seeking to improve their bottom lines, efficiency has become a key metric for measuring a firm's performance and sustainability. When a company operates efficiently, it can achieve its goals and objectives with minimal wastage of resources, thereby generating higher profits and maximizing shareholder value. On the other hand, an inefficient firm may experience operational bottlenecks, delays, and higher costs, which can reduce its profitability and negatively impact its reputation (Boisjoly Conine Jr. and McDonald IV, 2020).

Chuan'Chewie'Ang, Azad, Pham and Zhong (2021) explain that efficiency is how well a firm manages its financial resources (such as cash, debt, and equity) in relation to the amount of revenue it generates. It looks at factors such as how quickly a company can turn its inventory into sales and how efficiently it can use its assets to generate revenue. A more efficient manufacturing process can lead to a shorter cash conversion cycle, which is critical for manufacturing firms (Mbathi, Mwambia and Makena, 2021). Manufacturing firms typically have a significant investment in inventory and other resources, such as raw materials, work-in-progress, and finished goods. These resources represent a large portion of the company's working capital, and the longer it takes to convert them into cash, the more difficult it can be for the company to fund its operations and invest in growth (Arnaldi, Novak, Roscigno and Zhang 2021).

A longer CCC can indicate that a manufacturing firm is struggling to manage its working capital effectively. For example, if a company has a high level of inventory that is not selling quickly, it may need to invest more cash into inventory to keep production running. This can tie up cash that could be used for other purposes, such as paying suppliers or investing in growth opportunities (Rafiq, Ahmad, Ul Hassan, and Hakim, 2019). On the other hand, a shorter CCC can indicate that a manufacturing firm is managing its working capital effectively and has the flexibility to invest in growth opportunities. By shortening the CCC, manufacturing firms can free up cash that can be used for strategic investments, such as new product development, expansion into new markets, or acquisitions (Legesse and Guo, 2020; Burney, James and Wang, 2021).

Firm value refers to the total value of a company, which is the sum of the value of its assets and the value of its future cash flows (Patricia and Izuchukwu, 2022). By improving efficiency, a company can reduce its costs, increase its revenue, and ultimately increase its profitability (Akbar, Akbar and Draz, 2021). When a firm is more efficient, it can generate higher profits and cash flows, which can increase its overall value. Investors are typically willing to pay more for a company that is generating more cash flows and profits, as this indicates that the company has strong growth prospects and is likely to continue generating value in the future (Wang, 2019). Additionally, a more efficient firm is often better positioned to compete with other firms in its industry, as it can offer lower prices or higher quality products or services. This can lead to increased market share and higher revenues, which can further boost the value of the firm (Tekin and Gor, 2022).

According to Resource-Based View (RBV) theory (Barney (1991), a firm's resources and capabilities are the key determinants of its performance and competitiveness. Efficiency, which is a key resource for manufacturing firms, can help them achieve sustained competitive advantage and increased value. Moreover, RBV highlights the importance of the firm's internal resources in creating value, rather than external factors such as market conditions. By focusing on their internal resources and capabilities, firms can achieve superior performance and create value for their shareholders. In the case of manufacturing firms, improving efficiency can be a critical factor in creating value by reducing costs, increasing productivity, and improving quality control.

The RBV framework categorises an organization's assets as tangible or intangible. Intangible resources include knowledge, data, and organisational strength, while physical resources include tools. Efficiency is an intangible resource that can help manufacturing firms optimize their use of tangible resources, leading to improved performance and increased value (Nason, and Wiklund, 2018).

Researchers have found that the cash conversion cycle has a significant negative effect on the value of the firm (MahdaviKho Imeni and Edalatpanah, 2022 in Iran; Patricia and Izuchukwu, 2022 in Nigeria; Tekin and Gor, 2022 in Turkey). In this context, it is essential for firms to develop strategies that enhance their operational efficiency and optimize their use of resources to remain competitive and create value for their stakeholders.



## 1.1 Problem Statement

Efficiency is a critical factor that determines a firm's ability to optimize its resources and maximize its profitability. Manufacturing firms in particular, rely heavily on efficient production processes, inventory management, and supply chain operations to maintain a competitive advantage (Arnaldi, Novak, Roscigno and Zhang, 2021).

While improving efficiency can reduce costs, increase productivity, and enhance quality control, focusing solely on efficiency can lead to reduced quality control, overworked employees, and increased costs of implementation which could have a negative effect on the value of the firm. It is inferred from the above that manufacturing firms must balance their efficiency goals with other key performance indicators to ensure sustainable growth and increased value in the long run (Burney, James and Wang, 2021).

The Ghanaian literature has examined the effect of working capital management and firm profitability (Amponsah-Kwatiah and Asiamah, 2021; Mbawuni, Mbawuni, and Nimako, 2016; Akomeah and Frimpong, 2019; Prempeh and Peprah-Amankona, 2019; Yakubu, Alhassan and Fuseini, 2017). However, these studies considered only the profitability indicators neglecting the market performance of the firms. Also the focus on the cash conversion cycle is limited in these studies. This study, therefore, fills these gaps by examining the effect of firm efficiency on firm value of manufacturing firms in Ghana.



## **1.2 Research Objectives**

The general objective of the study examines the effect of firm efficiency on firm value of manufacturing firms in Ghana. The specific objectives are as follows.

1. To assess the level of efficiency of listed manufacturing firms
2. To examine the effect of efficiency on asset returns of manufacturing firms
3. To examine the effect of efficiency on market performance of manufacturing firms

## **1.3 Research Questions**

1. What is the level of efficiency of listed manufacturing firms?
2. What is the effect of efficiency on asset returns of manufacturing firms?
3. What is the effect of efficiency on market performance of manufacturing firms?

## **1.4 Significance of the Study**

This study is useful to academia. The findings of this study fill an important gap ignored in the Ghanaian literature by considering how efficiency affects the markets value.

This study can provide valuable insights for managers and investors. Although efficiency can have both positive and negative consequences on firm value, understanding the specific conditions and factors that lead to either outcome is crucial for making informed decisions. Additionally, a study can highlight the potential risks

associated with pursuing efficiency, such as neglecting quality control measures or overworking employees. Managers can use this information to balance their efficiency goals with other key performance indicators and ensure sustainable growth in the long term.

This study can also provide insights for investors who seek to evaluate the value of a manufacturing firm. By understanding how efficiency affects firm value, investors can make informed decisions on whether to invest in a particular firm, and how to value their investment.

The results would help state bodies recognise the working capital difficulties of listed firms. It would then allow government agencies to create appropriate financial instruments and policies to fund, facilitate and ensure successful working capital management and Ghanaian companies' survival.

### **1.5 Brief Literature Review**

According to the pecking order theory (Myers and Majluf, 1984), a company's funding sources are ranked according to priority, with equity financing being the last choice. First, the company uses its own funds, and only after they are depleted does it resort to borrowing. There are times when stock must be issued instead of increasing debt. A shorter CCC means that companies keep their creditors' cash for a longer time, which is like a loan without interest and gives the company the funds it needs to run.

Joseph and Chiemeka (2020) looked into how well Nigerian oil and gas companies that are on the stock market do financially when they manage their working capital. The study looked at secondary data from eleven oil and gas companies' annual and financial reports over a period of eight years (2011-2018). The collected data were analysed using a correlational study design and the Robust Generalized Least Squares (GLS) multiple regression method. The study's results show that the cash conversion cycle has a negative effect on ROA.

Sianipar and Prijadi (2018) used panel data and linear model regression with firm size as the control variable to look at Working Capital and Firm Value for 167 non-financial businesses listed on the Indonesia Stock Exchange from 2007 to 2016. According to the research, CCC has negative effect on Tobins' Q.

### **1.6 Brief Methodology**

The study's research strategy is explanatory since it explains the link between efficiency and business value. The study's data will be obtained from the annual reports of the selected organisations and will span the years 2010 through 2021. The population of the study shall include non-financial firms on the Ghana stock exchange. The variables for the study are firm efficiency which is the independent variable measured by the cash conversion cycle. Also, the dependent variable is firm value measured by Tobin's Q ratio and ROA. The control variables are firm size, liquidity, inflation, GDP and leverage. The data shall be analysed using ordinary linear regression.

### **1.7 Scope and Limitations of the Study**

This study examines the efficiency of manufacturing companies listed in Ghana. The temporal scope of the period in question spans a duration of 12 years, commencing in 2010 and concluding in 2021. The potential for omitted variable bias exists in the study due to the influence of various external factors, such as technological advancements on manufacturing firms. These factors may not be entirely accounted for in the study, thereby limiting its validity.

### **1.8 Organization of the Study**

The study is organized into five chapters. Chapter one shall provide an introduction to the topic, discussing the research problem and the study aims. Chapter two provides in-depth analysis of the existing literature. Chapter three will present the research design population, sample, and approach by which the objectives of the study would be achieved. Chapter four shall discuss the findings and results of the study. Chapter five shall present the summary, conclusions and recommendations as the final chapter.

## **CHAPTER TWO**

### **LITERATURE REVIEW**

#### **2.0 Introduction**

The chapter discusses the theories and concepts that the background of the study. The chapter is systematically organised and highlights the study's theories, research variables and empirical reviews.

#### **2.1 Conceptual Review**

The concepts relevant to the study are explained thoroughly under this section.

##### **2.1.1 Firm Efficiency**

Firm efficiency is how well a firm utilizes its resources (such as labour, capital, and materials) to produce goods or services. It is typically calculated by comparing the actual output of a production process to its potential output and measuring the difference as a percentage. A higher percentage indicates greater operational efficiency (Neukirchen, Engelhardt, Krause and Posch, 2022). Chuan'Chewie'Ang, Azad, Pham and Zhong (2021) also explains that efficiency is how well a firm manages its financial resources (such as cash, debt, and equity) in relation to the amount of revenue it generates.

Efficiency is also how well a firm uses natural resources (such as water, energy, and raw materials) to produce goods or services. It also looks at how quickly a firm can



complete tasks or deliver products or services to customers (Legesse and Guo, 2020). Shabbir, Xin and Hafeez (2020) explains efficiency from innovation and environmental perspective. They explain that efficiency is how well a firm is able to innovate and bring new products, services, or technologies to market. Also, efficiency is how well a firm balances its economic goals with its environmental responsibilities.

#### **2.1.1.1 Cash Conversion Cycle**

Cash conversion cycle (CCC) is a significant financial indicator that measures how long it takes a business to convert its inventory and other resource inputs into cash flow from sales. DIO is the total of days in sales plus DPO, while DSO is the sum of days in inventory + DSO plus DPO (Agostino, Brancati, Giunta, Scalera, and Trivieri, 2020; Arvidsson and Engman 2013).

The CCC measures the efficiency of a company's cash flow by showing how long it takes for cash to be generated from the sale of goods and services. It represents the time it takes for a company to purchase raw materials, produce goods, sell them, and receive payment for them (Filbeck, Zhao, and Knoll, 2017; Arvidsson and Engman 2013; Ren, Liu, Yang, Xiao, and Hu, 2019; Preve and Sarria-Allende 2010).

The CCC is a measure of a company's liquidity, and indicates how well a company manages its working capital. A lower CCC indicates that a company is more efficient at managing its working capital, while a higher CCC indicates that a company is less efficient (Arvidsson and Engman 2013; Boisjoly, Conine Jr, and McDonald IV,



2020). The CCC is used by investors and analysts to assess the financial health and operational efficiency of a company. By comparing a company's CCC to its peers or industry benchmarks, investors can evaluate how well a company is managing its cash flow and working capital (Preve and Sarria-Allende 2010; Chen, Diaz, ESensini and Vazquez, 2020).

The CCC is a tool that can be used by a company's management to identify areas for improvement in its working capital management. By analyzing the DIO, DSO, and DPO metrics separately, management can identify areas where inventory turnover, accounts receivable collection, or accounts payable payment could be improved in order to reduce the overall CCC (Mauboussin and Callahan, 2014), Baños-Caballero, García-Teruel, and Martínez-Solano, 2016).

CCC is a time-variant measure of a company's proficiency in handling its cash flow. Time is represented by a combination of balance sheet and income statement data. Days in inventory (INV), days in accounts receivable (AR), and days in accounts payable (AP) all contribute to the CCC. This metric is thus an operational variable that reflects the efficiency with which a company utilises its working capital (Zaher, and Illescas, 2022 Le, Vu, Du, and Tran, 2018; Kinasih Yekti Nastiti, Atahau, and Supramono, 2019).

As Cagle, Campbell, and Jones (2013) and Ahsan, Islam, Litan, and Huang (2020) point out, the CCC is deficient in its consideration of preexisting commitments. As a result, factors like interest, payroll, and taxes that are part of the present burden are left out. Furthermore, they may have a significant impact on the company's cash flow

and, by extension, its profitability. While this is an issue, the CCC remains the standard method for gauging the efficiency with which working capital is being used (Iqbal, Manzoor, Akhtar, and Amin, 2020; Garcia-Teruel and Martinez-Solano 2007).

#### **2.1.1.2 Inventory, Accounts Receivables and Accounts Payable**

Proactive efficiency strategies aim to reduce working capital by decreasing the CCC, whereas more cautious strategies permit more working capital. To loosen the working capital restriction and boost profitability, an aggressive strategy will aim for lower INV, lower AR, and more AP as a function of CCC. A more conservative strategy may free up more operating capital, which is essential for a company's continued viability (Nema, and Lyroudi, 2020; Howorth and Westhead, 2003; Panda and Nanda, 2018). It is worth noting that Deloof (2003) disputes this view. He speculates that a longer CCC indicates more sales and revenue. In spite of this, a greater CCC may hinder a company's profitability if the expenses of maintaining a larger working capital outweigh the advantages of, instance, having more inventory or being able to borrow money more cheaply.

In terms of operational risk and profitability, a company's inventory, accounts receivable, and accounts payable management are directly linked (Garcia-Teruel and Martinez-Solano 2007; Arvidsson and Engman, 2013; Ebben and Johnson, 2011)

Consequently, it follows that the optimization of CCC components should have an impact on business procedures. There is some flexibility in the level of INV that is maintained. Lower INV will reduce the cost of keeping stock, which in turn will boost productivity (Deloof, 2003; ERafiq, Ahmad, ul Hassan, and Hakim, 2019).

However, this will increase danger, since shortages may cost companies money. There will be less of an impact on the cost of capital and the smooth operation of the firm if the amount of accounts receivable is reduced (Deloof 2003; Nema, and Lyroutdi, 2020). Loss of credit-dependent consumers might potentially be detrimental to the business (Sharma and Kumar, 2011).

Third, the relationship between risk and efficacy may be modified in AP in several ways. Companies have lower CCCs when they wait longer to pay their vendors. The cost of capital will go down as a result of the company retaining its earnings. Supply chain issues may arise if AP levels rise (Muharromah, Ahmar, and Anwar, 2019). Deloof (2003), however, argues that payables accounts may be a source of inexpensive and adaptable financing that boosts a company's bottom line. Studies have shown that a reduction in INV, a decrease in AR, and an increase in AP may all result from better management of working capital (Zeidan, and Shapir, 2017; Bhutto, Abbas, ur Rehman, and Shah, 2015).

### **2.1.2 The Value of the Firm**

Firm value is the total value of all of the firm's outstanding shares of stock, as determined by the stock market. This is the price at which the firm's shares trade in the stock market, and it reflects investors' expectations about the firm's future performance (Ahmad and Muslim, 2022). Bouslah, Hmaittane, Kryzanowski and M'Zali (2022) also explains that firm value is the total value of the firm's assets, minus the total value of its liabilities. This represents the value of the firm's assets if they were sold off and all liabilities were paid off.

Firm value is also the value of the firm as a continuing business entity, based on its ability to generate future cash flows. This value takes into account factors such as the firm's reputation, customer relationships, and intellectual property (Kurniasih, and Rustam, 2022).

Investors' primary motivation for seeking the best feasible rate of return motivates the pursuit of value maximisation. Consequently, management should maximise either the return on investors' money or the worth of the firm (Torres, Bertín, and López-Iturriaga, 2017). The goal is to have the firm's management choose the capital structure that, in their view, would result in the greatest value for the company and its shareholders or investors. Exactly what factors should be considered when designing a capital structure for a corporation is an area of ongoing dispute.

According to Modigliani and Miller (1958), a firm's value increases due to leverage even though it must pay taxes. Since debt interest payments are deductible and provide a tax shelter, investors place a higher value on the firm (Ahmeti, and Prenaj, 2015). Every company should choose the one with the biggest debt as their model. But this theory fails in practise because it relies on unrealistic assumptions, such as the absence of transaction and bankruptcy costs. Taking on debt is riskier than other financing options, hence it is seldom employed. The probability of experiencing financial difficulties increases as debt levels rise after a bankruptcy. The fees and other expenses associated with declaring bankruptcy will reduce the value of the company. By comparing the potential tax hits and the price of financial distress, one may determine the optimal capital structure.



### 2.1.2.1 Determining the Firm's Value

An organization's value may be calculated in three distinct ways. The first is the "market to book" ratio, abbreviated "M/B." This ratio is calculated by dividing the share price by the book value of the company's stock (Qiu, Jiang, Liu, Chen and Yuan, 2021). The second one is more crucial. This ratio is known as the "Tobin's Q ratio." This ratio is calculated by dividing the market value of a company's debt and equity by the replacement cost of its assets. With a higher Q, a corporation is more inclined to invest than one with a lower Q. When looking for a company to invest in, look for one with a high Q-ratio. Tobin's Q has been referenced in a number of publications focusing on corporate management (Wong, Batten, Mohamed-Arshad, Nordin, and Adzis, 2021; Qiu, Jiang, Liu, Chen and Yuan, 2021).

In addition, the calculation of "Tobin's Q" uses a technique that differs from the one shown above. The academic community extensively use Kaplan and Zingales's (1997) notion of "Tobin's Q." To evaluate the performance of an asset, Tobin's Q compares its current market price to its book value. The market value of a firm at the beginning of its fiscal year is equal to its book value plus the market value of its common stock, minus the book value of its common stock and its balance sheet deferred taxes. Third, there is the discounted cash flow technique (Vlaović-Begović, Momčilović, and Jovin, 2013). In Modigliani and Miller's view, the business is best understood as a collection of profitable investment ventures. According to this plan, the cash flow will be distributed among several funding sources. Managers' possible misuse of these financial flows is not accounted for.

## **2.2 Theoretical Review**

The theories relevant to the study are reviewed. Accordingly, the resource dependence theory, pecking order theory and agency theory are considered

### **2.2.1 Resource-Based Theory**

Penrose (1959) put forward the resource-based idea. A corporation is defined as "a group of people and objects held together in some way by a formal structure." According to resource-based theorist Wernerfelt (1984), leaders and entrepreneurs may offer their businesses an advantage by amassing rare, valuable, and difficult-to-replicate operational resources (i.e., physical and intangible assets). Therefore, the theory is primarily concerned with the production of resources and their impact on a business's success (McIvor, 2009). On the other hand, according to Barney (1991), a company's activities and practises are determined by its resources, which may either enable it to accomplish more or restrict its actions.

According to Nason, and Wiklund (2018), the resource-based theory has been employed in several studies of the dynamic evolution of small business structures. Therefore, the theory clarifies the discrepancies between the behaviours of large corporations with unlimited means and those of smaller enterprises with less means. As a result, it is possible that a company's financial success is correlated with the number of resources it has available to it. It seems to reason that a business with a



large amount of working capital may also be well-managed, and the inverse is also true.

The resource-based theory provides an explanation for the connection between a company's resources and its profitability, and so may be connected to the study's variables (working capital management components and corporate governance mechanism). Examples of independent variables in this research include the primary components of working capital (short-term resources) that are employed often to generate revenue (dependent variable). In terms of corporate governance, the board of directors is primarily responsible for formulating strategies for optimising the company's near-term assets. The wealth of a company's shareholders may be increased by adhering to good governance practises. The 'resource dependence theory' holds that corporate directors may assist their companies deal with external pressures by acquiring and using the resources they need to be in business for an extended period of time (Pfeffer and Salancik, 1978). This concept is applied in this situation to ensure that the company's short-term assets are well-managed by all business managers. This implies that each director has access to resources that aid in the discovery of new prospects, the improvement of resource allocation methods, the consideration of payments to suppliers and the prompt recovery of debts, and ultimately the improvement of profitability.

### **2.2.2 Pecking Order Theory**

Donaldson (1961) proposed this concept, and it was subsequently refined by Myers and Majluf (1984). A firm's cost of capital increases in proportion to the amount of

knowledge it lacks. A company may fund its operations via internal earnings and external financing. There are two main sources of funding here: debt and equity. Due to the varying nature of the available data, the company must decide between loan and equity financing. As a result, it became clear that prioritising a company's finance requirements was essential (Owolabi and Obida, 2012). It is hypothesised under the pecking order theory that businesses prioritise internal finance above debt and equity financing. Thus, the concept proposes that a business maintains the hierarchy of its funding mechanisms. It is preferable to use internal funding if possible, and to use either loan or external financing rather than equity financing if possible. According to Myers, equity financing is not the ideal option for a business since investors do not have as much information about the firm as management does. Therefore, a corporation will issue debt until it has exhausted its own resources, and it will issue stock until it can no longer raise capital via either of these methods. A shorter CCC means that companies keep their creditors' cash for a longer time, which is like a loan without interest and gives the company the funds it needs to run.

### **2.2.3 Agency Theory**

The concept of shared ownership is central to the agency theory. Management (the agent) serves the interests of shareholders, which is the root of the issue (principal). Management's performance does not immediately impact anybody except shareholders. Disparities in information are crucial. Managers may end up picking mediocre employees if they have access to data, they are not familiar with. Financing strategies and dividend policies might convey messages to outside investors. This concept is also known as the "signalling idea." Increasing its worth would have

necessitated either more information or different information. However, the agency's high costs are a concern, too. To many, agency costs are simply the price tag attached to management's inability to put the interests of stockholders, bondholders, and the company's bottom line ahead of its own. Laziness, spending on unnecessary items, and poor financial decisions all contribute to these expenditures. Management's self-serving actions are detrimental to the interests of the company's stockholders and bondholders.

Thus, the goal of good corporate governance is to ensure that the interests of both managers and shareholders are being served. Board member compensation schemes and ongoing performance evaluations are two such approaches (monitoring). The efficiency of a system is directly proportional to the person or people who control it. The high per-unit cost of monitoring is a major deterrent for small investors. For corporate governance to succeed, agency expenses must be reduced. Due to the fact that agency costs reduce the worth of a business, and by extension, the wealth of its owners. The "perfect" corporate governance structure for a firm depends on several factors, including monitoring but also the composition of the board and the manner the company is controlled. The quality of management choices may be significantly influenced by the effectiveness of boards.

### **2.3 Empirical Review**

To better understand the impact of effective working capital management on the bottom line, Joseph and Chiemeka (2020) studied publicly traded oil and gas companies in Nigeria. Cash conversion cycle, average debt settlement, average

receivable collection, and inventory retention were used as surrogates for working capital management, while Return on Assets was used as a surrogate for financial performance. Data for this study came from 11 oil and fuel companies' annual and financial reports over a period of eight years (2011-2018). The Least Squares (GLS) method of multiple regression analysis was used to examine the data. Based on the findings of the research, it was shown that the cash conversion cycle significantly and negatively affects return on investment.

Dalci, Tanova, Ozyapici and Bein (2019) investigated whether firm size moderates the CCC and profitability which was proxied by return on assets (ROA) over 8- year period for 285 German non- financial firms. The study revealed that firm size moderated CCC and profitability; consequently as firm size decreases, CCC lengthens while the profitability decreases; however, as firm size increases, CCC lengthens, while ROA increases.

Chaudhry and Ahmad (2015) looked at how corporate governance affects the way manufacturing companies on the Karachi Stock Exchange handle their working capital. The research used information from the annual financial reports of 168 manufacturing companies over the time period (2010-2013). Feasible Generalized Least Square was used because of heteroskedasticity and autocorrelation. The results showed that corporate governance standards have a big effect on how well companies manage their working capital.

Kamau and Basweti (2013) looked into the link between how well a company is run and how well it manages its working capital. All 42 companies that were always



listed on the Nairobi Stock Exchange from 2006 to 2012 were included in the study. To get information, secondary sources were used. A one-way ANOVA test and two independent t-tests were used to figure out the level of significance. The study did not find any statistically significant link between corporate governance and how well working capital is managed.

Similarly, Zalaghi et al. (2019) examined the moderating role of firms characteristics on WCM and financial performance of the firms listed in Tehran Stock Exchange during 2008–2017 period. WCM was proxied by CCC while financial performance was proxied by ROA. The study used firm size and debt ratio as moderating variables. Multivariate regression model analysed the panel data. The study revealed that CCC has negative significant effect on ROA while sales growth has positive significant effect on ROA. And firm size positively and significantly moderated CCC and ROA.

Arthur and Ruslan (2018) looked at how working capital and company value affected 167 companies that were listed on the Indonesia Stock Exchange from 2007 to 2016. Net Trade Cycle stood for WCM, while TQ stood for the value of a TQ firm. As a control variable, the size of the firm was used. Researchers used a linear model to look at panel data and found that Net Trade Cycle has a large negative effect on firm value but that firm size has no effect.

From 2007 to 2016, Sianipar and Prijadi (2018) used panel data to study the Working Capital and Firm Value of 167 non-financial businesses that were listed on the Indonesia Stock Exchange. They used a linear model regression with firm size as the control. According to the research, CCC has a negative significant effect on Tobins'

Q, but sales growth, company size, and financial leverage all have a positive significant effect on Tobins' Q.

Arachchi, Perera, and Vijayakumaran (2017) looked at how 44 firms listed on the Colombo Stock Exchange handled their working capital and how much they were worth from 2011 to 2015. CCC looked at WCM, and TQ looked at firm value. Size of the company, amount of debt, and sales growth were the control variables. The research found that CCC and financial leverage have a negative and significant effect on TQ, while firm size and sales growth have a positive but small effect on TQ, and financial leverage has a negative but small effect on firm value.

MahdaviKho Imeni and Edalatpanah (2022) looked at the cash conversion cycle and the performance of companies listed on the Tehran Stock Exchange in 2012. This study's statistical sample includes 113 companies from the years 2012 through 2020. Multiple regression analysis with panel data was used to look at the data and test the hypotheses in this study. The results show that the length of the cash conversion cycle has a statistically significant negative link with present profitability and a statistically significant positive link with future profitability.

Patricia and Izuchukwu's (2022) research looked at how CCC affected the performance of Nigerian manufacturing companies that were on the stock market. The study was based on research that was done after the fact. The sample was made up of 21 manufacturing businesses that were listed on the Nigerian Stock Exchange. These businesses were chosen using a method called "purposeful selection." This investigation was based on the use of multiple regression techniques to look at



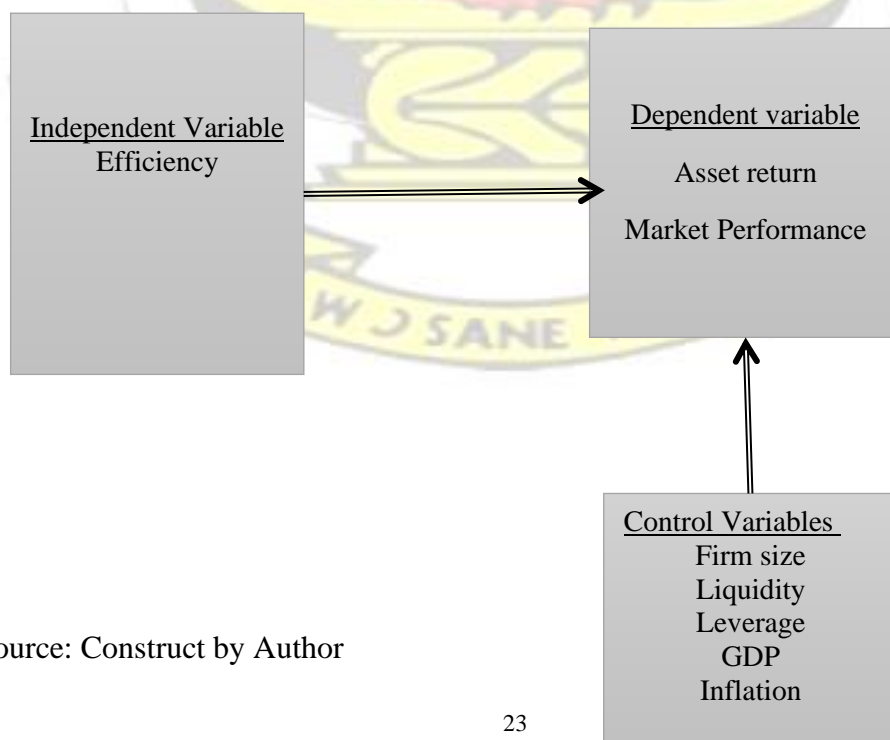
secondary data. The results showed that CCC had a negative effect on return on assets (ROA) and return on equity that was not statistically significant.

Tekin and Gor (2022), chose the 30 Borsa Istanbul firms with the highest net profit and used a panel data approach to look at the data they collected. There were statistically significant links found between the explanatory factors and the dependant variables of ROA and ROE that were both positive and negative. As expected, there is a statistically significant negative link between CCC and leverage, which are explanatory variables, and ROA, which is the dependant variable.

## 2.4 Conceptual Framework

The conceptual framework for the study is shown in the diagram in figure 2.1. The framework shows the connection among the variables for the study. The independent variable is linked to the dependent variable. The control variables are linked to the dependent variable.

**Figure 2.1: Conceptual Framework**



Source: Construct by Author

## **CHAPTER THREE**

### **RESEARCH METHODOLOGY**

#### **3.0 Introduction**

This chapter describes all of the methodologies and processes for data collection and analysis, and each step is justified. It covers the following topics: research design, population, sampling, data gathering processes, and data analysis tools and variables.

#### **3.1 Research Design**

According to Zikmund et al. (2011), the study design lays out the procedures to be followed throughout the research process, from data collection through analysis. There are three distinct sorts of studies that may be classified by the methods used to gather data: exploratory, descriptive, and explanatory (Neuman, 2014). The best method to learn something new, discover interesting connections, and re-evaluate the past is via exploratory study. Explanatory study attempts to demonstrate how one variable influence another and explains the link between two variables by examining a specific topic or circumstance. Thirdly, descriptive research aims to provide a "genuine image of people, events, or circumstances" (Saunders et al., 2009). The purpose of this research, which is classified as an explanatory study, is to identify and investigate the link between three factors: efficiency, corporate governance, and firm value.

### **3.2 Population of the Study**

The population consisted of all companies manufacturing firms that were listed on the Ghana stock market. There were 14 manufacturing companies listed on the stock exchange

### **3.3 Sample Size and Sampling Technique**

Purposive sampling method was selected to determine the sample size. The sampling method was chosen because the subjects possessed some unique information that is useful for the study (Etikan, Musa, and Alkassim, 2016). Since the study sought to investigate efficiency of manufacturing firms, hence firms were only selected if they were manufacturing firms in Ghana. The study chose the period 2010-2021. The year 2010 was selected to avoid the impact of the global economic crunch. The year 2021 was the period that most of the firms had published their annual reports. Companies whose data were unavailable for the most part of the sample period were left out of the analysis. After eliminating these businesses, twelve (12) of them remained.

### **3.4 Data Collection**

The data for this research came from secondary resources. This is because the information was acquired for a different purpose. The information was extracted from the companies' annual reports. The information was obtained from [annualreportsghana.com](http://annualreportsghana.com), which aggregates the financial reports of all firms registered on the Ghana Stock Exchange. The data covered the period 2010 - 2021.

Because the data covers several years and firms, it is classified as panel data. Panel data combines both time series data and cross-sectional data.

### 3.5 Techniques of Data Analysis

The researcher used a panel regression analysis-based model. This study makes use of a panel dataset including time series information for each business from 2010 to 2021 and cross-sectional information for all companies at a particular moment in time. Utilizing cross-sectional data that only spans one year in conjunction with the various variables necessary for regression to determine the causality between variables would be biased if twelve (12) separate enterprises were combined. The use of pure time series, in which a single corporation is presumed to represent the whole population across time, likewise fails to provide reliable estimations. Using panel models, unobserved variances or variations may be included into study (Gujarati and Porter, 2009). Several research firms have distinctive qualities that affect their economics yet are difficult to quantify analytically. Even if everything is defined, parsimony sets constraints on the investigation (which is very unlikely). The general form of the panel data model is specified as:

$$Y_{it} = \beta_0 + \beta X_{it} + \epsilon_{it}$$

The subscript denotes the cross-sectional dimension, and  $t$  represents the time-series dimension. The left-hand variable  $Y$  represents the dependent variable in the model,  $\beta X$  contains the set of explanatory variables in the estimation model with  $\beta$  as the induced coefficients of  $X$ ,  $\beta_0$  is taken to be constant over time.

Pooled OLS, fixed-effect model, and random-effect model are the three alternative techniques to define the panel regression equation. Companies look consistent when



employing a pooled OLS. Due to the absence of any missing variables that may alter the regressors, it is presumed that the model is adequately defined. The econometric model does not describe how unobserved heterogeneity impacts the regressors, so the fixed and random effects are based on that assumption.

On the contrary, the fixed effect shows that the unobserved heterogeneity is tied to the intercept (i.e. various entities in the study have different starting or start-up values known as the intercept) (i.e. different entities in the analysis have different initial or start-up values known as the intercept). Thus, there is a relationship between the regressors and the unobserved heterogeneity. Instead of making modifications for fixed effects or individual-specific features, the random effect model merely adjusts for the model's unobserved variability. Owing to the unobserved heterogeneity, the error terms for the relevant entities are altered. In this model, the standard error term is also influenced by the individual error terms of the entities, since no adjustment is done for the fixed effect on the assumption that the fixed effects do not correlate with the regressors. To differentiate between fixed and random effects, the Hausman test was applied.

### **3.5.1 Data Testing**

For OLS regression, the sample must meet certain criteria (Pevalin and Robson 2009). First, there must be a sufficient sample size to recreate the regression, making the findings more generalizable. The sample sizes in this dissertation were equivalent to those in other studies (e.g., Deloof 2003; Enqvist et al. 2014). For proper OLS regression, residuals must follow a normal distribution. The normality assumption



says that the mean distribution of independent samples is normally distributed (Gujarati, 2011). According to the central limit theorem, if the sample size is high enough, the (OLS) regression will be able to disregard this constraint (Hoeffding and Robbins 1948). According to Ghasemi and Zahediasl (2012), if the investigation involves more than 30 observations, normality should not be a problem. Since this research did not challenge the normalcy assumption, its relevance is restricted. It is required to check for multicollinearity among independent variables during OLS regression. Care must be made to avoid multicollinearity between the independent variables while doing a regression. This is due to the fact that the regression model assumes there is no association between the independent variables. This assumption was tested through the VIF test.

### 3.5.2 Model Specification and Estimation Technique

The study employed a panel regression model. A similar model was employed by Joseph and Chiemeka (2020). The regression model is presented below.

$$ROA_{it} = \alpha + \beta_1 EF_{it} + \beta_2 LIQ_{it} + \beta_3 INFL_{it} + \beta_4 GDP_{it} + \beta_5 LEV_{it} + \beta_6 SIZE_{it} + \epsilon_{it} \dots\dots (1)$$

$$MP_{it} = \alpha + \beta_1 EF_{it} + \beta_2 LIQ_{it} + \beta_3 INFL_{it} + \beta_4 GDP_{it} + \beta_5 LEV_{it} + \beta_6 SIZE_{it} + \epsilon_{it} \dots\dots (2)$$

ROA: Asset return, MP: market performance, EF: efficiency, LEV: leverage, LIQ: liquidity, INFL: inflation, GDP: gross domestic product.

### 3.6 Variables and Measurement

The study variables are presented in this section. They include the dependent, independent and control variables.

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**Table 3.1: variables and measurement**

<b>Variables</b>	<b>Measurement</b>	<b>Source</b>
<b>Dependent Variable</b>		
Market Performance	Natural log of the ratio of market value to the book value of assets	Kadioglu and Yilmaz (2017)
Asset return	Net income divided by total assets	Farhan, Almaqtari, Al-Homaidi, and Tabash (2021)
<b>Independent Variable</b>		
Efficiency	Cash conversion cycle (Inventory turnover period plus debtor collection period minus creditor payment period)	Joseph and Chiemeka (2020)
<b>Control Variable</b>		
Liquidity	Current assets divided by current liabilities	Ullah, Fida and Khan, (2012)
Inflation	Consumer price index	Muniandy and Hillier (2014)
Firm Size	Natural log of total assets	Dalci, Tanova, Ozyapici and Bein (2019)
Leverage	Total debt to total assets	Tamimi, and Takhtaei (2014)
GDP	Growth in GDP in a year	Neog and Gaur (2020)

Source: Construct by Author

### 3.7 Reliability and Validity

The relevant data utilised for the study were collected from the annual reports and financial statements of the sampled listed firms. It is a requirement that all firms listed on the Ghana stock market are mandated to have their financial statements independently verified by an external auditor for the purposes of ensuring that the

financial statements presented mirror in all material respect underlying the economic transactions of the listed firms. The stock market is also considered one of the most vibrant and active stock markets in Sub-Saharan Africa (Abor and Fiador, 2013). Given this, the reliability and validity of the information presented in the financial statements of the respective listed sampled firms are certified by their appointed independent external auditor. Therefore, relying on the above two reasons, any data extracted from these statements could be considered both valid and reliable for research purposes.



## **CHAPTER FOUR**

### **DATA PRESENTATION AND ANALYSIS**

#### **4.0 Introduction**

This chapter presents the results of the study. It also includes a discussion of the results. The descriptive statistics is presented and then the main results are also presented.

#### **4.1 Descriptive Statistics**

The data on return on assets indicates that the mean is 0.04. This figure means that for every cedi of assets the companies own, they generates 4 cents of profit. In other words, the company's net income is equal to 4% of its total assets. The mean Tobin's Q ratio (a proxy for market performance) is 1.23. A Tobin's Q ratio of 1.23 means that the market value of the company is 1.23 times greater than the replacement cost of its assets. This suggests that investors have a positive view of the company's future prospects and are willing to pay a premium for its stock.

The mean cash conversion cycle (proxy for efficiency) is 50 days. This means that it takes a longer period for the sampled firms convert inventory and account receivables into cash. A leverage ratio of 0.5 means that a company's total debt is equal to 50% of its total assets. This suggests that the company is using debt financing to a moderate extent and has a relatively low level of financial risk. The mean figure for liquidity is 2.3. This suggests that the firms are in a good position to meet its short-



term obligations, as they have more than enough liquid assets to cover their current liabilities.

**Table 4.1: Descriptive statistics**

Variable	Obs	Mean	Std. Dev.	Min	Max
ROA	125	0.039	0.137	-0.380	0.455
MP	125	1.234	1.784	0.00	12.52
EF	125	49.750	228.568	-1208.344	822.664
LEV	125	0.518	0.257	0.021	1.232
LIQ	125	2.310	4.856	0.075	52.720
SIZE	125	17.634	1.743	13.768	20.599
INFL	125	11.894	3.436	7.144	17.455
GDP	125	6.115	3.467	0.514	14.047

*Source: Construct by Author (2023) ROA: return on Assets, MP: market performance, EF: efficiency, LEV: leverage, LIQ: liquidity, INFL: inflation, GDP: gross domestic product.*

The mean inflation rate is 11.89, which means that the overall prices of goods and services in the economy have increased by 11.89% over the period. This can have several implications for the economy and consumers. A high inflation rate can lead to a decrease in purchasing power, as the same amount of money can buy fewer goods and services. It can also lead to higher interest rates as the central bank tries to control inflation by reducing the money supply. Additionally, high inflation can lead to decreased economic growth and investment as investors become more cautious and uncertain about the future. The mean figure for GDP growth is 6.11 which means that the country's economy has grown by 6.11% over the period being measured (e.g., one year). In other words, the country has produced 6.11% more goods and services

than it did in the previous year, and this is reflected in the overall increase in GDP.

A high GDP growth rate is generally considered a positive sign for an economy, as it indicates that the country is producing more goods and services and creating more jobs.

#### 4.2 Correlation Matrix

Table 4.2 shows the correlation among the independent variables. It is seen from the table that the highest correlation is 0.53 which is between GDP and inflation. This figure is below 80 per cent and as such does not indicate any high correlation. Also, all the VIF values are less than 10 which shows there is no presence of multicollinearity.



**Table 4.2: Correlation matrix**

	ROA	MP	EF	LEV	LIQ	SIZE	INFL	GDP	VIF
ROA	1.000								
MP	0.379	1.000							
EF	0.133	-0.032	1.000						1.32
LEV	-0.518	-0.241	-0.393	1.000					1.33
LIQ	0.113	0.061	0.367	-0.380	1.000				1.31
SIZE	0.171	0.256	-0.104	-0.004	-0.131	1.000			1.08
INFL	0.002	0.085	-0.098	-0.054	0.154	-0.084	1.000		1.51
GDP	0.198	0.065	0.062	-0.093	-0.069	-0.109	-0.531	1.000	1.48

*Source: Construct by Author (2023) ROA: return on Assets, MP: Market performance, EF: efficiency, LEV: leverage, LIQ: liquidity, INFL: inflation, GDP: gross domestic product.*

### 4.3 Model Specification

Table 4.3 presents the results for the Hausman test. The test results shows that the significance level for equation 1 is 0.58 which is above 5 per cent and also the significance level for equation 2 is 0.00 which is below 5 per cent. This means that the appropriate model for equation 1 is the random effect and the appropriate model for equation is the fixed effect model.

**Table 4.3: Hausman test**

	Test	Statistics	Significance
Equation one	Hausman	4.71	0.58
Equation two	Hausman	19.30	0.00***

Source: Construct by Author (2023), \*\*\*: 1 per cent significance level

### 4.4 Presentation and Discussion of Results

The results for the study are presented in this section as well the discussion in order of the objectives of the study.

#### 4.4.1 Level of Efficiency of Listed Manufacturing Firms

The data in figure 4.1 shows that overall, the listed manufacturing firms are not efficient. For most of the years (2010 - 2021) covered under the study these firms mostly have positive cash conversion cycle. This suggests that these firms are taking longer to convert their investments in inventory and other resources into cash from

sales. This may indicate that the manufacturing industry as a whole is facing challenges in managing their working capital and generating cash from their operations. According to Arachchi, Perera and Vijayakumaran (2017) these manufacturing firms could be facing challenges that prolong the cash conversion cycle.

long lead times for sourcing raw materials and supplies, extended payment terms with customers, and slow collections. Additionally, they may face challenges in managing their inventory levels and balancing production schedules with demand, which can result in excess inventory and cash tied up in unsold products.

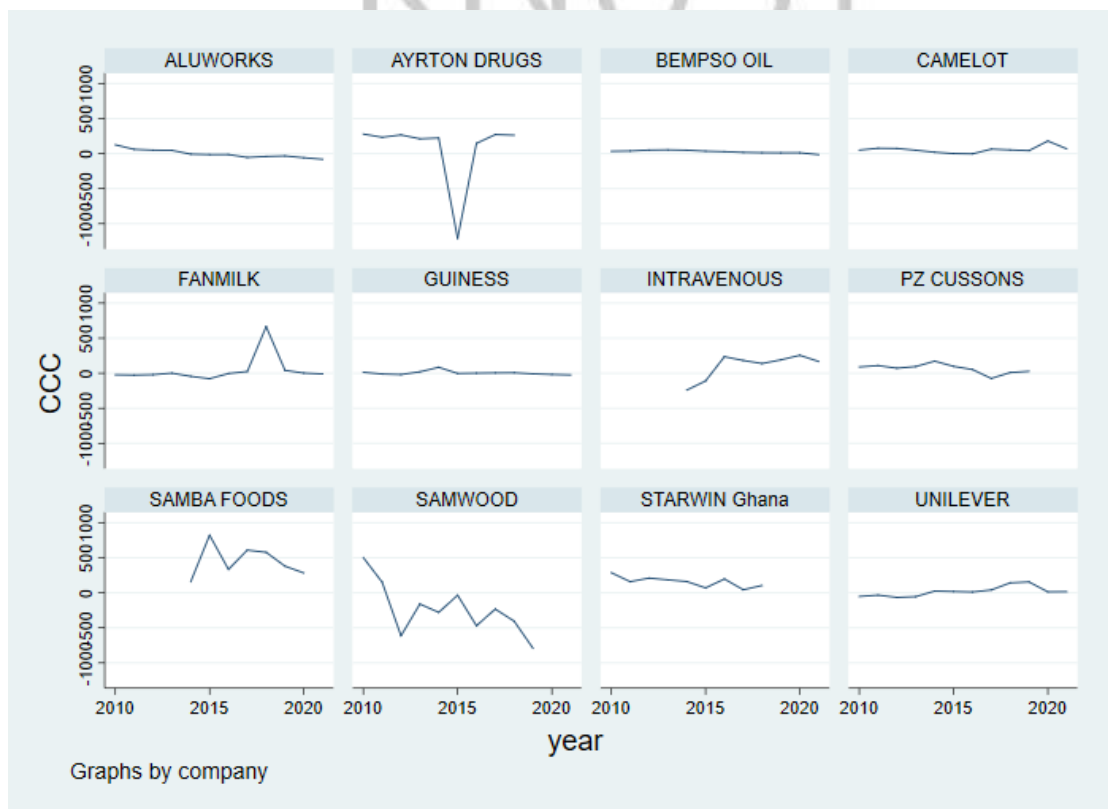
Hussain, Nguyen, Nguyen, Nguyen and Nguyen (2021) explain that manufacturing firms often have a significant amount of inventory in the form of raw materials, work-in-progress, and finished goods. Managing inventory levels and turnover can be challenging, and excess inventory can tie up cash in the short term. Also, the production process for manufacturing firms can be complex and involve many different stages, which can make it difficult to balance production schedules with demand. This can result in overproduction, which can lead to excess inventory and cash tied up in unsold products.

Manufacturing firms face extended payment terms from suppliers or customers, which can slow down cash flow. For example, a manufacturing firm may have to pay suppliers for raw materials upfront but not receive payment from customers until weeks or even months after delivery (Farhan, Almaqtari, Al-Homaidi and Tabash, 2021). Also manufacturing firms may also face challenges in collecting payments



from customers in a timely manner. This can be due to factors such as slow payment processing systems, disputes over pricing or quality, or customers experiencing financial difficulties (Chamberlain and Aucouturier, 2021).

**Figure 4.1: Efficiency of manufacturing firms**



However Samwood company limited has a negative cash conversion cycle for the most of the sampled period indicating high efficiency. This suggest tha the paper manufacturing company is able to convert its investments in inventory and other resources into cash from sales faster than it takes to pay for them. This may indicate that the paper manufacturing company is more efficient in managing its working capital and generating cash from its operations compared to the other manufacturing firms in the sample.

This negative cash conversion cycle for the paper manufacturing company could be attributed to a number of factors such as efficient inventory management, short payment terms, fast inventory turnover times, and efficient collections processes. Additionally, they may have unique characteristics that allow for faster conversion of investments into cash, such as a high demand for paper products or a streamlined supply chain.

#### **4.4.2 Effect of Efficiency on Asset return of Manufacturing Firms**

The r-square in Table 4.4 is 0.34 which indicates that the independent variable together with the control variables explain 34 per cent of the variation in the dependent variable. The coefficient of cash conversion is -0.0000214 and the corresponding p-value is 0.77. The p-value is above the 10 per cent significance level hence the relationship is not significant. The results relate to the study of Al-Abass (2017).

**Table 4.4: Efficiency and assets return**

	Coef.	Std. Err.	t-stat	p-value
EF	-0.0000214	0.000072	-0.3	0.77
LEV	-0.2726881	0.0714351	-3.82	0.00***
LIQ	-0.0008494	0.0013199	-0.64	0.53
SIZE	0.0143834	0.0071293	2.02	0.07*
INFL	0.0048451	0.0017595	2.75	0.02**
GDP	0.0092616	0.0041033	2.26	0.05**
Cons	-0.1861472	0.1734153	-1.07	0.31
Obs	125			
r-sqaure	0.34			

*Source: Construct by Author (2023), EF: efficiency, LEV: leverage, LIQ: liquidity, INFL: inflation, GDP: gross domestic product, \*\*\*: 1% significance level, \*\*: 5% significance level, \*: 10% significance level*

#### **4.4.3 Effect of Efficiency on Market Performance of Manufacturing Firms**

The r-square in Table 4.4 is 0.21 which indicates that the independent variable together with the control variables explain 21 per cent of the variation in the dependent variable. The coefficient of efficiency is -0.0007857 and the corresponding p-value is 0.02. This finding implies that there is a significant negative relationship between the efficiency and market performance. Sianipar and Prijadi (2018) study also obtained the same results.

**Table 4.5: Efficiency and market performance**

	Coef.	Std. Err.	t-stat	p-value
EF	-0.0007857	0.000292	-2.69	0.02**
LEV	-0.9973263	0.7349743	-1.36	0.20
LIQ	0.0141511	0.0040055	3.53	0.01***
SIZE	-1.02609	0.2338062	-4.39	0.00***
INFL	0.0125881	0.0321252	0.39	0.70
GDP	-0.0308787	0.0562752	-0.55	0.59
Cons	19.89029	4.885252	4.07	0.00***
Obs	125			
r-sqaure	0.21			

*Source: Construct by Author (2023), EF: efficiency, LEV: leverage, LIQ: liquidity, INFL: inflation, GDP: gross domestic product, \*\*\*: 1% significance level, \*\*: 5% significance level, \*: 10% significance level*

The finding can be explained by the fact that a shorter CCC (proxy for efficiency) can improve a company's liquidity by reducing the amount of time it takes to convert its investments in inventory and other resources into cash flow from sales. This can increase the availability of funds for investment in capital expenditures or other strategic initiatives, which could improve the company's ability to generate future cash flows.

Also, a shorter CCC indicates that a company has more efficient working capital management, which can help to reduce the investment in working capital and improve the availability of funds for investment in growth initiatives. This could increase the company's ability to generate future cash flows and positively impact

Tobin's Q ratio. Arachchi, Perera and Vijayakumaran (2017) also explain that a shorter CCC indicate better operational efficiency, which can improve the company's profitability and reduce costs. This could increase investor confidence in the company's ability to generate future cash flows and grow its market value.

This finding is also in line with the agency theory. According to the agency theory, shareholders entrust their resources to managers who act as agents on their behalf. The managers are expected to make decisions that maximize the value of the shareholders' investments. In this context, a shorter CCC can signal that a company's management is efficient in managing its resources, which can improve investor confidence in the company's ability to generate future cash flows and grow its market value.

By reducing the amount of time it takes to convert investments in inventory and other resources into cash, a shorter CCC can provide more liquidity to a company. This increased liquidity can be used for investment in capital expenditures or other strategic initiatives that can help grow the company's market value. In addition, a shorter CCC may also indicate better management efficiency, which can reduce the cost of managing working capital and increase profitability. This could further enhance investor confidence and lead to a higher Tobin's Q ratio.

The finding also supports the resource-based theory. The resource-based theory (RBT) suggests that a firm's resources and capabilities are the main sources of its competitive advantage and value creation. A shorter cash conversion cycle can be considered a resource or capability that a firm can leverage to create value. By



efficiently managing its cash flows and reducing the time it takes to convert inventory into cash, a firm can increase its working capital, which can lead to higher profitability and increased market value. This, in turn, can be viewed as a unique resource or capability that other firms may find difficult to replicate.

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## **CHAPTER FIVE**

### **SUMMARY, CONCLUSION AND RECOMMENDATIONS**

#### **5.0 Introduction**

The results and conclusions of the study are described in this chapter, which also includes an explanation of the findings and recommendations for additional research on the topic.

#### **5.1 Summary of Findings**

The study found that most of the manufacturing firms covered under the study have positive cash conversion cycle suggesting that it takes longer for the firms to convert their inventory and account receivables into cash.

The study also found that there was no significant effect between efficiency and asset return since the p-value for efficiency was above the 10 per cent significant level (0.77) . It was also discovered that efficiency had a significant negative effect on the market performance of manufacturing firms (Coeff: -0.000785, P-value: 0.02).

#### **5.2 Conclusion**

The study examined the effect of efficiency on firm value of manufacturing firms. The study design was explanatory. The study sampled 12 manufacturing firms from 2010 to 2021. The data was analysed descriptively and quantitatively using panel regression.

It is inferred from the findings that most of the manufacturing firms are inefficient and the effect of efficiency on firm value varies based on the metrics used. A longer cash conversion cycle may have a negative impact on market performance because it can signal to investors that the company may be facing liquidity challenges or difficulty in generating cash flows. However, the impact on ROA may be insignificant because a longer conversion cycle may not significantly affect the company's profitability.

### **5.3 Recommendation**

The management of the manufacturing firms should analyse the reasons behind the longer cash conversion cycles and take steps to reduce them. They should consider optimizing the inventory management, negotiating better payment terms with suppliers, and improving the collection process of receivables. This would improve the company's cash flow and working capital management, making it financially stronger and more competitive in the long run.

Shareholders/investors should closely monitor the cash conversion cycle of the manufacturing firms in their investment portfolio. They should also ask for explanations from the company's management on the reasons behind the longer cash conversion cycles and what steps they are taking to address the issue. Investors may also consider diversifying their portfolio with companies having a more efficient cash conversion cycle.

#### 5.4 Suggestion for Further Studies

The study examined the effect of efficiency on firm value. Further research can be conducted by considering mediating and moderating variables. Hence corporate governance can be examined whether it moderates or mediates the relationship.

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## Appendix

Regression with Driscoll-Kraay standard errors      Number of obs      =      125  
Method: Random-effects GLS regression      Number of groups      =      12  
Group variable (i): id      Wald chi2(6)      =      217.49  
maximum lag: 2      Prob > chi2      =      0.0000  
corr(u\_i, Xb) = 0 (assumed)      overall R-squared      =      0.3393

ROA	Drisc/Kraay		t	P> t	[95% Conf. Interval]	
	Coef.	Std. Err.				
CCC	-.0000214	.0000072	-0.30	0.772	-.0001798	.0001371
LEV	-.2726881	.0714351	-3.82	0.003	-.4299156	-.1154605
LIQ	-.0008494	.0013199	-0.64	0.533	-.0037545	.0020557
SIZE	.0143834	.0071293	2.02	0.069	-.0013081	.0300749
inflation	.0048451	.0017595	2.75	0.019	.0009724	.0087178
GDP	.0092616	.0041033	2.26	0.045	.0002303	.018293
_cons	-.1861472	.1734153	-1.07	0.306	-.5678316	.1955372

Regression with Driscoll-Kraay standard errors      Number of obs      =      125  
Method: Fixed-effects regression      Number of groups      =      12  
Group variable (i): id      F( 6, 11)      =      21.59  
maximum lag: 2      Prob > F      =      0.0000  
within R-squared      =      0.2079

TQ	Drisc/Kraay		t	P> t	[95% Conf. Interval]	
	Coef.	Std. Err.				
CCC	-.0007857	.000292	-2.69	0.021	-.0014283	-.0001432
LEV	-.9973263	.7349743	-1.36	0.202	-2.614994	.6203412
LIQ	.0141511	.0040055	3.53	0.005	.005335	.0229673
SIZE	-1.02609	.2338062	-4.39	0.001	-1.540694	-.5114857
inflation	.0125881	.0321252	0.39	0.703	-.0581189	.0832951
GDP	-.0308787	.0562752	-0.55	0.594	-.1547395	.0929822
_cons	19.89029	4.885252	4.07	0.002	9.137927	30.64266