

**KWAME NKRUMAH UNIVERSITY OF SCIENCE AND TECHNOLOGY COLLEGE
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DEPARTMENT OF ACCOUNTING AND FINANCE.**

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**WORKING CAPITAL MANAGEEMNT AND PERFORMANCE OF GSE LISTED OIL
FIRMS; THE MODERATING ROLE OF EARNINGS MANAGEMENT**

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**A THESIS SUBMITTED TO THE DEPARTMENT OF ACCOUNTING AND FINANCE, KWAME
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OF THE REQUIREMENTS FOR THE AWARD DEGREE OF
MASTER OF SCIENCE ACCOUNTING AND FINANCE**

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DECLARATION

I hereby declare that this submission is my own work and that, to the best of my knowledge and belief, it contains no material previously published or written by another person nor material which to a substantial extent has been accepted for the award of any degree or diploma at Kwame Nkrumah University of Science and Technology, Kumasi or any other educational institution, except where due acknowledgement is made in the thesis.

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DEDICATION

I dedicate this thesis to my family.

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I am most thankful to God Almighty for providing me the wisdom and knowledge to complete this thesis.

To my supervisor for his guidance, comments and corrections for making this thesis successfully completed.

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ABSTRACT

Working capital accounts for more than 50% of total assets under management in most companies. Due to inefficient working capital and earning management, many oil and gas companies lose billions every year. Thus, this study seeks to examine the effect of working capital on the profitability of listed companies in Ghana, ascertain the effect of earnings management on the profitability of listed companies in Ghana, and determine whether earnings management moderates the relationship

between working capital and profitability and listed companies in Ghana. The agency, stakeholder and stewardship theories were applied in achieving the stated objectives. The case study approach with quantitative method is applied in the study. In order to determine which elements were deemed necessary to obtain accurate data required to achieve the research objectives, the researcher applied a reasonable selection method to select all oil and gas companies listed on the Ghana Stock Exchange. These companies are Ghana Oil, Total. The study concludes that it is not only good working capital management that increases efficiency, but also good interest income management. The estimated outcomes indicate that depending on the elements of working capital management, the cash conversion cycle and the average number of days to collect have a statistically significant negative impact on the financial performance of the companies. Discretionary accruals were also found to have a negative impact on profitability. It can be concluded that not only do current asset items have an impact on financial performance, but also profit management can have a negative impact on profitability. The study confirms a significant link between firm size and equity returns. This indicates that management must adopt and pursue appropriate policies that will ensure an improvement in the sales or asset base of the firm, which can be done through innovative products and extensive marketing.

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CHAPTER ONE

INTRODUCTION

1.1. Background of the study

Today's financial management, specifically the management of and control of working capital, needs huge attention and it is a difficult task due to the existence of a high portion of working capital in a business. In addition, the administration of current assets which has an accounting year to convert into cash and current liabilities which is payable within a year and the relationship among the two may be considered as working capital management (Banos-Caballero et al., 2019). Recently, working capital management has become a crucial for the financial health and success of any organization, and the oil industry is no exception. With its volatile nature and capital-intensive operations, the oil sector requires careful management of its working capital to ensure smooth operations and sustainable growth (Padachi, 2006). According to Tauringana and Afrifa (2013), working capital management (WCM) is the process of managing the balance between current assets and current liabilities of a firm. In addition, Deloof, (2003) asserts that WCM is crucial for the liquidity and profitability of a firm, as it affects its ability to meet its obligations and invest in profitable projects. Thus, it is important for ensuring liquidity, profitability and solvency of the firm. In view of this, Padachi (2006) posits that efficient working capital management enables firms to meet their short-term obligations, optimize cash flows, reduce costs, and improve profitability. Arshad and Gondal (2013) aver that WCM also affects the performance of firms in terms of return on assets (ROA), return on equity (ROE) and Tobin's Q, which measure the efficiency, profitability and market value of the firm respectively. In the same vein, Mbawuni et al. (2016) assert that WCM affects the performance of firms in various sectors, including the oil sector, which is a vital industry for many economies.

In the oil industry, which is highly capital-intensive and involves significant working capital requirements, effective management of working capital is of utmost importance (Mbawuni et al.,

2016). According to Mbawuni et al. (2016), Oil firms listed on the Ghana Stock Exchange (GSE) face unique challenges related to working capital management, including volatility in oil prices, uncertainties in the regulatory environment, and high operational costs. These factors affect the cash flows, profitability and risk of oil firms (Aminu & Zainudin, 2015). Therefore, oil firms need to adopt effective WCM practices to optimize their operational efficiency, financial performance and competitive advantage (Akoto et al., 2013).

Several studies have examined the relationship between WCM and performance of oil firms in different contexts. For instance, Choiriya et al. (2021) found a positive and significant relationship between investing and financing policies and return on assets (ROA), but a negative and insignificant relationship between these policies and return on equity (ROE) and earnings per share (EPS). Choiriya et al. (2027) concluded that WCM influences the performance of Nigerian oil firms mainly through ROA. Moreover, Sarkar and Sarkar (2013) revealed that WCM had a significant and negative impact on Tobin's Q, implying that lower WCM leads to higher corporate performance. Sarkar and Sarkar (2013) recommended that firms should reduce their cash conversion cycle, inventory turnover ratio and receivables turnover ratio, but increase their payables turnover ratio to enhance their value. Meanwhile, Wassie (2021) used account receivables period, cash conversion cycle, accounts payable period and inventory conversion period as measures of WCM, and ROA and return on investment (ROI) as measures of performance and found that all WCM variables had a positive and significant impact on both ROA and ROI, except for inventory conversion period, which had a positive and significant impact on ROI but an insignificant impact on ROA. He suggested that firms should extend credit terms for customers, prolong their cash conversion cycle, extend their payment period and hold a high volume of inventory up to an optimal level.

Furthermore, the moderating role of earnings management (EM) on the relationship between WCM and performance of firms has received less attention in the literature, especially in emerging markets, like Ghana. Baños-Caballero et al. (2019) assert EM affect the relationship between WCM and

performance in different ways. Additionally, Tucker and Zarowin (2006) posit that EM enhances the relationship between WCM and performance by smoothing earnings fluctuations, reducing information asymmetry, and signaling future prospects. Other studies have indicated that EM can also weaken the relationship between WCM and performance by distorting financial statements, increasing agency costs, and impairing corporate governance (Leuz, et al., 2003; DeFond et al., 2007; Dhole et al., 2018).

Based on the existing literature on the subject matter shows that there is no consensus on the direction and magnitude of the relationship, as different studies have used different measures, methods, samples and contexts. Moreover, most of the studies have focused on developed or emerging markets, while few studies have examined the case of Ghanaian oil firms listed on Ghana Stock Exchange (GSE) (Akoto et al., 2013; Mbawuni et al., 2016). Therefore, this study aims to fill this gap by exploring the effect of WCM on performance of GSE listed oil firms using panel data analysis for the period from 2015 to 2019. The study also examines the moderating role of earnings management (EM), which is the manipulation of accounting information to influence the perception of stakeholders about the firm's performance.

1.2. Problem statement

The stability of a company relies on its potential to control its working capital and profits, which are important elements of corporate financing. The achievement or failure of an institution relies largely on the potential of its financial managers to manage its working capital and profit components effectively. This eliminates the risk of default on current obligations and avoids excessive investment in assets (Bagh et al., 2016). Current assets consist of capital in the sort of inventories, physical cash, account receivables, short-term investments and other current assets (Jeng-Ren et al., 2006). Current liabilities consist of account payables in the form of debt to suppliers, interest payments on noncurrent

liabilities, short-term loans, income tax and dividend payments and other current liabilities (Mbawuni, 2016).

While long-term decisions on market structure or strategy can determine the ultimate success of a company, short-term decisions on working capital and profits determine whether a company will grow in the long term. Thus, the maintenance of sufficient working capital and earnings becomes a sufficient condition for profitability (Korankye & Adarquah, 2013). This study is based on the principle that while working capital and earning management is important for the profitability of Ghana's oil and gas industry, the work has focused exclusively on the effect of working capital components on profitability. The investigator praises the work of Adebowale (2014); Raza et al., (2015); Mbawuni (2016); Musyoka (2018) and Nyachwaya (2019). However, none of these studies considered the impact of working capital and profit management on profitability. Furthermore, as far as the researcher knows, there are studies that have considered the impact of working capital on profitability and earnings management on profitability but no study has considered the moderating role of earnings management on the relationship between working capital and firm profitability; thus, this work seeks to occupy the identified gap in the literature.

1.3. Research objectives

The main of objective of the study is to assess the effect of working capital management and performance of GSE listed firms; the moderating role of earnings management. In order to achieve the general objective of the study, the following specific objectives to be achieved includes to;

- i. Examine the effect of working capital on the profitability of listed companies in Ghana.
- ii. Ascertain the effect of earnings management on the profitability of listed companies in Ghana.
- iii. Determine whether earnings management moderates the relationship between working capital and profitability and listed companies in Ghana.

1.4. Research questions

With regard to achieving the specific objectives stated, the following questions would be answered;

- i. What is the effect of working capital on the profitability of listed oil companies in Ghana?
- ii. What is the effect of earnings management on the profitability of listed oil companies in Ghana?
- iii. Do earnings management moderate the relationship between working capital and profitability and listed oil companies in Ghana?

1.5. Significance of the study

The significance of the study lies in its potential to enhance the understanding of the subject matter. The outcome or findings of this study will have significant implications for various stakeholders involved in the oil industry and beyond. For instance, investors in GSE listed oil firms will help them make informed decisions regarding their investment portfolio, asset allocation, and risk management strategies. Furthermore, the study would enable the management of GSE listed oil firms to improve their decision-making processes related to managing the firm's current assets and liabilities, which will ultimately impact the firm's financial performance. For the firms in the Oil industry, the outcome of the study would help them gain valuable insights that could be applicable to their own business operations.

Also, governments and countries that heavily rely on the oil industry for economic growth will also benefit from this study's findings. By understanding the factors that influence the performance of oil firms, governments and policy-makers will be able formulate appropriate measures to support the growth and stability of the industry, such as crafting tax policies and regulations that encourage efficient working capital management practices. Finally, the study will provide a solid foundation for future researchers and studies in the field of working capital management, earnings management, and performance analysis within the oil industry. Thus, the findings would serve as a reference point for scholars seeking to deepen their understanding or expand on the existing knowledge base.

1.6. Scope of the study

The survey scope does not have access to topics associated with working capital, earning management and financial performance. The foundation of the survey data is from listed manufacturing companies in Ghana. The study would consider all listed manufacturing companies on the Ghana Stock Exchange out of which tall oil and gas companies would be considered from the years 2015 to 2019 due to time constraints.

1.7. Organization of the study

Generally, the study will be organized into five chapters. Chapter One is the introductory and contains the following sub-topics: background, statement of the problem, research objectives, research questions, significance of the study, scope and limitation of the study as well as organization of the study. Chapter Two will be centred on literature necessary for the study covering related studies on the topic. Chapter three is the research methods. This chapter will provide methodology which includes research design, the population, sampling and sampling procedure, and data collection instrument and data analysis. Chapter four is the results and discussions. This chapter present the analysis of the findings and interpretation of the data gathered. Chapter five provides the summary of the findings, recommendations and conclusion.

CHAPTER TWO

LITERATURE REVIEW

2.0. Introduction

This section of the work shows a review of the literature on working capital management, earning management and performance. This includes, for example, the concepts of working capital, earning management and financial performance measures, theoretical literature, empirical literature and theoretical frameworks that should guide the research.

2.1 Conceptual Review

2.1.1 Working Capital Management

Hofmann and Kotzap (2013) defines working capital management includes all aspects of current asset and liabilities management. The objective of working capital management is to minimize the capital employed in the rotation process by reducing working capital and increasing current liabilities. To facilitate working capital management, strategic management uses various strategies to meet the optimal stage of working capital (Afande, 2015). According to Kiptoo et al. (2017), working capital is the daily capital that a company must use to reach break-even. Working capital can include the purchase of raw materials, labour costs, advertising and rent. Horton (2018) defines working capital as the addition of existing assets over current costs. The main principles of existing assets include records, commercial borrowers, cash and banks. Working capital includes inventories, commercial borrowers, cash, commercial lenders and overdrafts. Penman (2013) also defined working capital as "inventory, fuel, semi-finished products, including work in progress and finished products and byproducts; cash". Therefore, working capital represents the raw materials costs, work in progress, completed products inventories and trade receivables, less trade payables. Based on the various definitions given above, working capital management refereed to the strategic control of resource that helps to control the day-to-day operations of an organization.

2.1.2. Working capital management policies

The policy of working capital policy can be defined as an approach that lays down some principles for managing cash and short-term liabilities (Oganga, 2015). The policy emphasizes the extent of speculation with working capital and its shares financed by temporary assets, such as bank surpluses (Muya and Gathogo, 2016). Working capital policies contribute to reducing the ability of managers to make decisions that are not conducive to the survival of the company. These strategies are grouped into three working capital policies (Penman, 2013). These include an aggressive, defensive and conservative policy.

a. Aggressive Policy

Aggressive policy is a policy whereby a firm opts to perform with a lower level of cash, credit and liquidity for a specific business stage or turnover (Muya and Gathogo, 2016). To increase profits, management pays lower interest rates, but this can be dangerous if interest rates change temporarily or cash flows are lower (Horton, 2018).

b. Defensive policy

The company follows a defensive strategy, using non-current debt and capital to finance fixed assets and a higher percentage of current assets. As a result, the level of working capital is relatively high, which means that the company has more net assets or existing assets than its current liabilities. This reduces the risk by reducing current liabilities, but also reduces efficiency as long-term liabilities are subject to high interest rates, which increases the financial burden (Watson and Head, 2010). To balance risk and return, most companies will adopt a moderate approach. This approach combines defensive and aggressive working capital strategies. Under this approach, current assets on the balance sheet are financed in the short term by long-term debt and long-term debt is used to finance fixed assets and long-term working capital. This method allows a low level of working capital to be financed with a reasonable level of risk and return (Lynstagaas and Berg, 2016).

c. Conservative Approach

According to Muya and Gathogo (2016), a conservative approach is a safe policy for financing working capital. A company that adopts a conservative approach maintains an excessive level of working capital and thus a higher level of working capital. Majority of the working capital is sourced from durable liquidity sources such as shares, bonds and loans. Under the conservative approach, fixed assets and working capital are financed from long-term sources (Mbawuni et al., 2016).

2.1.3 Components of working capital management

Various components of the management of working capital consist of cash conversion cycle, receivables management, debt management, inventory management and cash management. These components are vitally discussed below:

a. Cash Conversion Cycle

Cycle of cash conversion has been shown in several studies to be a common method of managing working capital. The cash conversion cycle is the period during which cash and cash equivalents are held in receivables and cash equivalents. The cash conversion cycle (CCC) defines the period during which the assets of the company are held (Samiloglu and Akgun, 2016). Cash are invested in the operations of the company when the cash conversion cycle is increased or extended; this can have two effects. It may have a better impact on productivity if a longer conversion cycle results in higher revenues, or it may have a negative effect on productivity if the cost of speculating with working capital rises faster than the return on a major resource or a generous trade credit (Vuran and Adiloglu, 2018). This means that there are relatively few opportunities to raise additional funds from these cash flows. In this case, it is said that the cycle of cash conversion is adversely linked to the performance of the company, because by managing a sufficient cash conversion cycle and considering other optimal working capital components, owners/operators can create positive value for the company owners (Pais and Gama, 2015). In contrast when Cash Conversion Cycle curtails, money becomes

unrestricted for other usage such as capitalizing on equipment, infrastructures and selling process, which in turn leads to the higher operating profit of the company.

b. Account Receivables Management

According to Khalid et al. (2018), there are so many types of inventory. They include alteration and the auction of the good. Work-in-process is typically the quantity of resources manufacturing corporations maintain. Other types of assets are in-transit, raw supplies and unsold processed products. Products in-transit is records between various phases of the construction and storage procedure. According to Aminu and Zaimudin (2015) raw goods enable the companies to function compliantly in its purchases. Selling on credit is part of business operations. However, offering credit has a cost, which may be interest charged on an overdraft or other short-term loan. Bhutto et al. (2015) noted cost of selling on credit includes administration costs and bad debts. Lynstagaas and Berg (2016) argues that these charges must be considered against the profits of augmented sales ensuing from the opportunity for clients to delay payment. Muya and Gathogo, (2016) noted that extended credit periods may increase revenue and lead to surge in the risk of bad arrears.

The main objective of managing accounts receivable is to safeguard arrears are collected within stated credit periods (Bhutto et al., 2015). It also ensures that there is documentation of delinquent accounts to lessen the total credit which is recorded as a bad liability (Aminu and Zaimudin, 2015).

c. Account Payables Management

Trade credits are the result of the fact that most industries buy their goods and services on credit. In the case of trade credit, entrepreneurs temporarily grant interest-free commercial interest (Muya and Gathogo, 2016). According to Bhutto et al. (2015), account payables are sources of temporary investment. According to Mbawuni et al. (2016), a trade credit makes up the bulk of temporary financing. For rare goods, customers who take out the credit may be less privileged in terms of

delivery time or practical support. Effective monitoring of commitments includes finding acceptable credit terms from dealers, obtaining credit in times of financial difficulty and maintaining good relations with dealers (Mbawuni et al. (2016).

d. Inventory Management

According to Raza et al. (2015), inventory management is a prerequisite for operational and efficient working capital management. Abosede and Luqman (2014) describe estimates as stocks of raw materials, reserves, components, work in progress and finished goods. According to Zawaira and Mutenheri (2014), an inventory is the delivery of an item or resource used in a company. Arshad and Gondal (2013) showed that from a global perspective, supply management is about obtaining the most profitable quantity of that raw material so that the total value of all the company's resources can increase. Raza et al. (2015) said that the main purpose of inventory management is to inform managers about the volume of goods ordered when reordering goods, the regularity of orders and the corresponding emergency stocks in order to minimize stock shortages. The benefits of owning the goods should be weighed against the costs of determining the best stock level (Mbawuni et al., 2016). Therefore, the overall objective of asset management is to have what is necessary and to reduce the frequency of stock shortages.

2.1.4 The importance of working capital management

Benefits of the management of working capital include higher income on capital, improved creditworthiness and solvency, higher profitability, greater liquidity, higher utility value, favourable financing conditions, smooth production, the ability to absorb shocks and demand peaks, and competitive advantages (Nyachwaya, 2019). These elements are explained in more detail below:

a. Higher Return on Capital

According to Hassan & Ahmed (2017), companies with less working capital will have a higher return on capital, which will give shareholders or owners of companies a higher return on the money invested in the company. On the other hand, companies with high working capital will have a lower return on equity, which should not lead to higher returns for shareholders who have invested their money in the company (Waithira, 2016).

b. Improved Credit Profile and Solvency

In the view of Maisiba (2017) the capability to accomplish temporary goals is a requirement to longterm comfort and often a good sign of opposition's credit risk. There are temporary responsibilities such as unprocessed goods, salaries, and other working expenditures which firms are required to pay. Suitable working capital organisation will permit a corporate to pay their temporary obligations on time.

c. Higher Profitability

In the view of Maisiba (2017), the efficient supervision of account payables and receivables is a significant driver of small industries' productivity. According to Baños-Caballero et al. (2019), account payables in the form of job credit can serve as a source of interest fund for small entities.

This would enable firms to save the money which would have used to pay for interest and thereby increasing their profitability. Where discounts are used too, firms are able to take advantage of the discount to pay in term to benefit from discount and thereby enhancing their profitability (Jamaa, 2018).

d. Higher Liquidity

According to Nouri and Soltani (2015), a bigger amount of money can be invested in working principal, so a firm handling its working capital resourcefully could profit from extra liquidity and be less reliant on outward funding. This is particularly vital for smaller industries as they characteristically have a restricted access to external financing sources. Moreover, small trades regularly pay their taxes in cash from incomes so an effective working capital supervision will permit a business to effectively apportion its assets and expand its cash management (Jamaa, 2018).

e. Increased Business Value

There is augmented business worth in the efficient supervision of working capital. Businesses with more effective working capital management will produce more free cash currents which will lead to a higher corporate assessment and creativity (Nouri and Soltani, 2015).

2.2. The Concept of Earnings Management

Rhaman and Nasr (2013) asserted earning management is a grey area where accounts are audited, managers use hotkeys and revenue reporting reflects management requirements rather than the basic financial presentation of the company. For the purposes of this statement, management likes to communicate what it wants, rather than the actual activities of the company. Governments must have specific objectives and for these reasons they report revenues. For example, if the government is motivated to invest in revenue, it will want to report more revenue in order to have more incentives. Rhaman and Rahman (2017) also defined earning management as "the planned and timely reporting or monitoring of material facts or accounting information that is misleading and compels the reader to change his or her decision or conclusion compared to all available information. The description emphasizes that management knowingly makes an error in the accounting information and that it is this information that informs shareholders about the asset. In large and expensive companies, the

management would like to change the income in order to reduce it. High profits from radical costs will call for attention of investors in these companies.

Hall et al. (2013) define earning management as the application of discretionary accounting, deliberate mismanagement or the use of actual transactions to change data in the financial statements to achieve results based on verified book values. They also argue that the misrepresentation of revenue to achieve specific objectives is an example of the use of planned or deliberate misrepresentation. The standard change in the criteria for calculating reductions to maintain interest rates used in commitment contracts is also an example of the Secretariat exercising its discretion to influence results based on the data provided.

2.2.1 Techniques for Earnings Management

The income of the company is treated differently. Those that are the result of ethical flexibility are allowed. Some of the methods used by the managers to increase and decrease the profitability of the period are: the “reserve bottles” method, a large factory for the future method, the "large bath" method, the rejection of a child with problems and the cleaning of the investment portfolio (Agyekum et al., 2014).

a. Cookie Jar Reserve

Cookie jar reserves is a technique management used to adopt idealistic expectations on issues such as revenues and provisions, inventory write-downs, loan losses or warranty costs. In the provision for cookies, management overestimates revenues and guarantee costs in good times and uses these revaluations to reduce similar costs in times of crisis. This provision is made by management to continue to generate stable earnings in periods when the company's profits are expected to be lower (Levitt, 1998).

b. Big Bath

The big bath is known as the method that involves the operations in which a company's profits are shown to be lower than its actual profits for a given year. Watts and Zimmerman (1990) stated that managers inspired by bonus programmes don't often have an influence on earnings to improve them, but that they further feel encouraged to have an impact on earnings downwards in order to obtain big benefits and bonuses in future years. This is why managers use poor accounting to increase costs and reduce profits in the present year so as to get big opportunities in terms of bonuses.

c. Big Bet on the Future

Once there is success, it is said that the company purchases from someone else or that the parent company takes a big risk for the future. With this technique, companies write off the R&D costs of the acquired company, which means that they increase their operating costs by writing off a large part of the purchase price as R&D costs. This increases future profits by minimizing further expenses. Mother firms at once insert profits of recently obtained subsidiaries to their profits, which increase the profits of the parent company during this period (Rhaman & Nasr, 2013).

d. Flushing the Investment Portfolio

As soon as a company invests into something else and its speculation does not reach 20% of the total property, we all see it as inert investment. This can be divided as a commercial guarantee, which is a negotiable guarantee that is not reflected in the operating result and is not included in the income until it is sold. Companies manage their profits by holding auctions, trading securities to increase or decrease their profits, and even offering securities for sale to transfer profits or losses to the income statement (Levitt, 1998) Reclassification of securities collection in the securities industry

e. Throw out a problem child

As soon as a company gets more stakes in another company, the majority shareholder emerges as the mother firm and the different company the subsidiary. However, if the auxiliary does not meet its objectives, it decreases the total turnover of the company. Further reductions are often planned for the future. The company's directors operate in different ways to deal with this situation. For smaller companies in difficulty, managers will report profits and losses as they see fit. Another way to manage profits using this method is to divert profits by distributing or exchanging shares with existing shareholders, thus passing the problem on to them (Rhaman & Nasr, 2013).

2.3 Advantages and Disadvantages of Earnings Management

2.3.1 Advantages of Earnings Management

Earning management enables companies to enhance its performance on document whilst certain practices change in such a way that different practices achieve a specific goal. For example, the introduction of a new reduction method will increase a company's revenue. The use of revenue smoothing techniques helps a company maintain a stable level of income over several years, indicating to investors that their investments are in good shape. When a business consists of additional debt and reduced equity, this is usually limited to the contract.

The directors can rely on these agreements to achieve their income targets through income management (Tauringana and Afrifa, 2013).

2.3.2 Disadvantages of Earnings Management

The earning management will not lead to a significant increase in the income of the company good economic results can be presented at the time of the liquidation of the company. Earning management can destroy investors' expectations (Sarkar & Sarkar, 2013). Earning management is also misleading for investors. Shareholders, creditors, experts and employees will draw their own conclusions from the declared profits of the company. So, if the declared profit of a company changes, this can also

lead to wrong decisions by investors. Stakeholders will lose focus on companies that earning management reports on. For some investors, earning management is not the rule, so they try to avoid transactions with companies caught in revenue management (Raza et al., 2015).

2.4 Measuring Financial Performance

The firm's potential to manufacture new assets, from day to day operations over a given time frame and success is known as financial performance and is thus measured by remaining income and cash from operations. Sarkar & Sarkar (2013) stated that financial performance is an integral indicator of how the company generates income from its capital. It also illustrates the general economic strength of a company over a period of time and allows comparisons to be made between different companies in the sector over the same period. The financial performance of a company can be highly dependent on its stability and efficiency. Stability is the risk and performance aspect of cash income. Below is a critical analysis of some of the factors that influence the company's financial performance:

2.4.1 Return on Assets (ROA)

Return on Assets (ROA) is a financial performance policy widely applied in the management of working capital under this policy (Kiel and Nicholson 2003). ROA is considered residual income divided by total resources and is a preliminary estimate of performance. This is a policy that explores the performance of the goods applied (Bonn, Yoshikawa and Fan 2004). According to Epps and Cereol (2008), the return on assets shows the benefit derived from the assets invested in capital resources. The effective use of an institution's resources is best illustrated by the frequency with which it generates income from its resources. Because management is responsible for its activities and the use of resources, ROA is a policy that allows users to determine the quality of the organization's performance based on the level at which the management of the entity is performing brilliantly (Epps and Cereola 2008).

2.4.2. Return on Equity (ROE)

This is a different vital gauge of a firm's economic performance which is employed in investigating on working capital management. (Deloof, 2003). Epps and Cereola (2008) claimed that one of the main factors for which businesses function is to generate revenues which is the prize of its stockholders. Hence, Return on Equity (ROE) is a policy which shows stockholders, as well as other investors, the incomes which have occasioned from the cash put in by stakeholders. It is achieved at by dividing net income by common equity. The ROE is labelled as possessing some shortcomings. These comprise the fact that it is not risk-delicate (for instance, the percentage of risky resources and the solvency condition is not found in the ROE figure), it does not consider the organisation's longterm policy or important extra-ordinary entities). ROE is hence not an independent performance policy.

2.4.3. Return on Capital Employed (ROCE)

Return on Capital Employed (ROCE) is a gauge of corporate effectiveness and capital productivity. ROCE is a derivative of productivity, how much revenue a business generates before interest on debt and tax (EBIT) and operation, how much a firm has devoted in operating resources to make that amount income (Deloof, 2003). At a discrete commercial level ROCE permits contrast between business elements of different magnitude over time, shows where to capitalize further and where to cut back, shows whether it is valuable borrowing additionally to invest, shows if prospects of stockholders are being accomplished, designates the supreme maintainable growth of a firm; and is used to check if a mission is going according to plan or not. ROCE can be used to examine working productivity, balance sheet management efficacy and the capability of income on total principal used to measure a commerce's performance. It can be employed to aid management in improving both the productivity (EBIT) and balance sheet management. Advancements in these areas will lead to enhancements in the ROCE (Deloof, 2003).

2.5. Theoretical Review

2.5.1. The agency theory

An agency relationship refers to a situation where the principal engages a representative to undertake some duties or work on his or her side. The significance of agency theory to working capital management can be observed from the viewpoint of financial manager, who is usually a representative of the proprietors (principals) of a company, and who makes all the significant choices regarding all the temporary resources and debts of a firm. The financial manager takes custody of decisions concerning receivables, payables, inventories /stock and charges of a business. With respect to earnings management, Kautonen, Van Gelderen, and Tornikoski (2013) indicated that instead of directors to satisfy the investors they somewhat accomplish their own goals. This is realized as directors alter incomes down when their surplus is at uppermost.

By the insider information of the representative, info asymmetry may occur between the representative and the investor which will offer a chance to the representative to handle incomes (Mawutor, 2015).

2.5.2. The stakeholder theory

According to Muljono & Suk (2018), it is the interest from the various stakeholders that leaves the financial executives with no option other than to ensure the efficient management of working capital necessary of maintaining shareholders' wealth maximization. The symbolic relationships noted here require that the interests of each party should be served yet they are seemingly in opposition to each other. The theory implies making appropriate decisions to control all of these. This study thus considers working capital management and focuses on how it distresses interests of shareholders. Regarding the importance of the theory of shareholder on earning management, shareholders expect directors to value it for their money. Investors expect a constant and worthy company. The government further wants many companies to settle taxes devoid of changing management to fool the process. The public also expects these companies to provide more jobs, infrastructure, etc. The

important question today is: Do companies offer to society what they discover for themselves, or do they use revenue management practices to avoid this responsibility?

2.5.3 The stewardship theory

The stewardship theory relates the accomplishment of the directors and inclines to debate against the agency theory that administrative opportunism is not appropriate. According to Kyereboah-Coleman & Biekpe (2006), stewardship theory states that a director's goal is first to maximize the company's value because, a director's need of accomplishment and victory is achieved when the corporate is functioning effectively. Similarly, Miller & Sowerbutts (2018) argued that stewardship theory regards directors as steward of the firm's resources and will be inclined to act in the finest interest of the shareholders. It is therefore prudent to argue that stewardship theory holds managers to protect the interest of the stakeholders and make decisions on their behalf.

According to Muljono & Suk (2018), the sole objective of managers is to create and maintain a successful organization in order to maximize shareholders wealth. Precisely, representatives have access to information about the company, which brands them extremely capable of operating towards the company's wellbeing (Kiel & Nicholson, 2003). Lastly, companies' directors seek to utilize the companies' assets in the best conceivable way to maximize the companies' worth, according to Kiel & Nicholson (2003). This is due to the fact that, any delinquency in utilizing these assets may distress their reputations and future career projections (Musso and Schiavo, 2008). Grounded on these opinions, stewardship theory can add up to enhancing working capital management. This is because the study assumes that as stewards, financial executives ensure that working capital is well managed with the interests of all stakeholders at heart. With regards to the stewardship theory, the assumption is that financial executives are to act as stewards of the resources of the firm and to make sure that reports on these resources are as accurate as possible. Thus, managers are not to manipulate earnings towards a favoured direction.

2.6. Empirical Review

The section of the chapter looked at existing literature conducted on the subject matter. Thus, numerous empirical surveys have been carried out on the working capital management influences on business performance in different countries.

2.6.1 The Effect of Working Capital on the Profitability

Musyoka (2018) examined the working capital management effects on the effectiveness of the Kenyan oil sector. The survey used a balanced group of ten (10) companies over a six-year period. The study used a non-experimental approach and combined a standardized least squares valuation method to investigate this relationship. The results show that days of open sick pay significantly positively influenced the performance. However, unused commodity days and unpaid sales days did not have a statistically significant impact on the productivity of Kenya's oil and gas companies. Raza et al. (2015) ascertained the working capital management influences on the performance of oil firms in Pakistan. The study established this relationship through an explanatory study and a proportionate analysis. The results showed that receivables and payables were positive in 2008 and 2009 and negative in 2010. Data on the operating ratio, gross margin, gearing and cost conversion were considered positive for all years except 2010.

Over a six-year period from 2008-2013, Mbawuni et al. (2016) examined the working capital management influences on the performance of five (5) Ghanaian oil and gas utilities. As a result of the descriptive analysis, correlation and regression, it was found that of the elements of working capital (cash conversion cycle, average days of inventory, and average days of sales and average days of payment); only the average days of payment have a statistically significant impact on the return on assets (ROA). Nyachwaya (2019) used explanatory studies and multiple linear regression models to link working capital management methods to economic performance in Kenya. Using a panel data of five companies over a five-year period, the study showed a positive and statistically significant relationship between wage days, collection days and financial performance.

2.6.2 The Effect of Earnings Management on the Profitability

Rhaman and Rahman (2017) further studied methods, incentives and controls in earning management. They focused on the quality of revenues and earning management methods and concluded that high accounting standards, audit committee awareness, corporate governance, and stakeholder awareness and morale play a key role in controlling profit management. In addition, Nouri and Soltani (2015) emphasized the effects of working capital management on the economic effectiveness of companies on the listed Cyprus Stock Exchange. The study used a sample of 60 companies and annual data for 2008-2012. Using several methods of linear regression, the results show that the degree of credit periods as well as the extent of storage periods positively influenced the company's effectiveness, while the degree of credit periods and the cycle of cash conversion do not affect the profitability of the companies.

2.6.3 The Relationship Between Working Capital, Earnings Management And Profitability

Adebowale (2014) ascertained the working capital management effects and financial constraints on business performance. The study used data from 215 companies over a four-year period (2008-2012). The effects were examined using conventional methods for estimating minimum squares and fixed/family effects. The results of the analysis show that the financial constraints of companies correlate significantly and positively with the management of working capital and company effectiveness. The outcomes showed that effective and efficient working capital management influences the performance of the firm. Similarly, Rhaman & Rahman (2017), two methods of earning management can be used. The first concerns the flexibility of GAAP with regard to changes in profits and is known as earning management accounting. The second part also refers to a situation where management changes operational solutions such as supply or protection in order for management to control the flow of cash underlying these solutions that is referred to transaction structure.

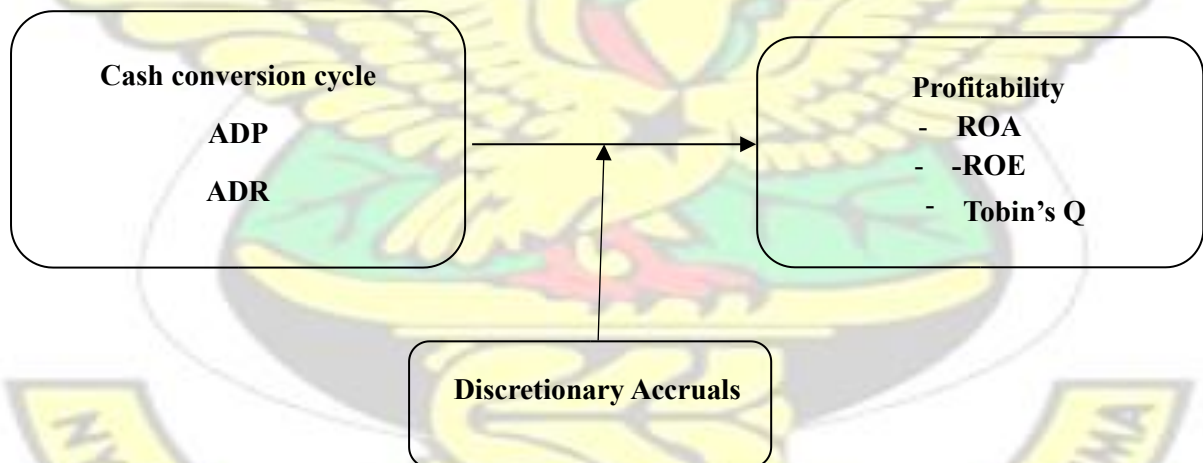
Dudutari et al. (2023) investigated the influence of Working Capital Management (WCM) on the financial performance of publicly listed companies in Nigeria. The analysis of secondary data from the period of 2012 to 2021 employed the utilization of cash conversion cycle, Account Receivable Management, and Account Payable Management metrics. The findings of the study indicate that there is statistically significant relationship between the cash conversion cycle and financial performance. The management of cash conversion cycle, accounts receivable and accounts payable showed a statistically significant impact on the financial performance of publicly traded companies in Nigeria. The study therefore suggests that firms should maintain an optimal level of working capital in order to maximize their overall value. Additionally, the effective management of cash flow is deemed to be of utmost importance for organizations while maintaining a balanced working capital management, with particular focus on managing account receivables, payables, and inventory. This is because efficient working capital management is anticipated to have a beneficial influence on the market value of firm.

Wassie (2021) analyzed the impact of WCM on performance of Ethiopian exporters, which include oil firms, and found that accounts receivable period (ARP), CCC and accounts payable period (APP) had a positive and significant correlation with both ROA and ROI, while inventory conversion period (ICP) had a positive and significant impact on ROI, but an insignificant impact on ROA. They also found that there was an inverted U-shaped relationship between CCC and both ROA and ROI, indicating that there is an optimal CCC that maximizes the performance of exporters. To end this, Sarkar & Sarkar (2013) explored the impact of WCM on Tobin's Q of public sector oil and gas companies in India, and found a negative and significant relationship between cash conversion cycle and Tobin's Q, but a positive and significant relationship between current ratio and Tobin's Q.

2.7. Conceptual framework

According to Mbawuni et al. (2016), a conceptual framework is a tool that helps to organize and explain the relationships between the variables of interest in a research study. The framework builds upon the previous research conducted by Mbawuni et al. (2016) and incorporates key variables to better understand their causal relations. In this study, the dependent variables are Return on Assets (ROA), Return on Equity (ROE) and Tobin's Q, which are commonly used as proxies for financial performance. These measures will enable the researcher to assess the impact of working capital management and earnings management on the overall profitability of oil firms. On the other hand, the independent variables are the measuring indicators of WCM, which include, the cash conversion cycle (CCC), average days payable (ADP), average days receivables (ADR), and earnings management (and discretionary accruals) as a moderating variable. Figure 2.1 shows the conceptual framework.

Figure 2.1: Conceptual framework



Source: Author's construct (2023)

The conceptual framework is based on the assumption that working capital management influences the financial performance and growth of firms (Sawarni et al., 2022; Singhania et al., 2012). Working capital management refers to the management of current assets and current liabilities to ensure

sufficient cash flow and liquidity for the firm (Singhania et al., 2012). Cash conversion cycle is a common measure of working capital management efficiency, which indicates the number of days that a firm takes to convert its resources into cash (Sawarni et al., 2022). A shorter cash conversion cycle implies a higher efficiency and a lower risk of insolvency. Average days payable and average days receivables are components of cash conversion cycle, which measure the number of days that a firm takes to pay its suppliers and to collect its receivables, respectively. Discretionary accruals are a proxy for earnings management, which refers to the manipulation of accounting information by managers to achieve certain objectives, such as meeting earnings targets or avoiding losses (Mbawuni et al., 2016). Earnings management can affect the quality and reliability of financial reporting, and thus influence the decisions of investors and creditors.

On the other hand, financial performance is the outcome of the firm's operations and activities, which reflects its profitability and value creation. Return on Asset and Return on Equity are two common indicators of financial performance, which measure the return on the total assets and the shareholders' equity, respectively. A higher return implies a higher profitability and a higher value for the firm. The relationship between working capital management, earnings management and financial performance can be complex and dynamic, depending on various factors such as industry characteristics, firm size, growth opportunities, market conditions and regulatory environment.

CHAPTER THREE

METHODOLOGY

3.0 Introduction

The purpose of the section aimed at describing methods and procedures used to perform these tests. The chapter begins with an explanation of the survey design, followed by an explanation of the population surveyed, sampling procedures, data collection methods and variable measurement. The next chapter is devoted to data analysis and model specifications.

3.1 Research Design

This study adopted a quantitative research approach to examine the effect of working capital management and earnings management on the performance of listed oil firms in Ghana. It is suitable for studies that aim to measure the magnitude, frequency, or relationships of variables. A quantitative approach is suitable for this study because it allows the researcher to test hypotheses, measure variables, and analyze data using statistical techniques (Creswell, 2014). Moreover, a quantitative approach enables the researcher to generalize the findings to a larger population and enhance the validity and reliability of the results (Saunders et al., 2019).

The study also used both descriptive and explanatory as its research design. A descriptive research type aims to describe the characteristics of a phenomenon or a population, such as the level of working capital management and earnings management among listed oil firms in Ghana (Bryman & Bell, 2015). On the other hand, an explanatory research type seeks to explain the causal relationships between variables, such as the effect of working capital management and earnings management on the performance of listed oil firms in Ghana (Yin, 2017). The descriptive research type helps to describe the working capital, earnings management, and profitability of listed companies in Ghana, while the explanatory research type helps to explain how and why these variables affect each other.

By combining both descriptive and explanatory research types, this study can provide a comprehensive and in-depth understanding of the research problem.

The research strategy for this study is experimental research. It is suitable for studies that aim to establish causal relationships between variables. Experimental research involves manipulating one or more independent variables (such as working capital management and earnings management) and observing their effect on one or more dependent variables (such as performance) while controlling for other confounding factors (Sekaran & Bougie, 2016). Experimental research is appropriate for this study because it can establish causality, test hypotheses, and measure the magnitude and direction of the effects (Zikmund et al., 2013).

3.2 Study Population

The population of the study consists of all oil and gas firms that are listed on the Ghana Stock Exchange (GSE) as of August 2019 and have published their annual reports online for the period 2009-2018. This population is chosen because it represents the most relevant and accessible sample of firms that operate in the oil and gas sector in Ghana, which is the focus of this research (Creswell, 2014). According to Creswell & Plano Clark (2018), the population is the total or sum of all elements, organizations or members that follow a particular element. The oil and gas sector is a significant contributor to the Ghanaian economy and has experienced rapid growth and development in recent years (Akoto et al., 2013). Therefore, studying the working capital management, earnings management and profitability of these firms can provide valuable insights into their financial performance and efficiency.

3.3 Sample and Sampling Technique

The sample and sampling technique for this study is based on the purposive sampling method, which involves selecting a specific group of participants that are relevant to the research topic and objectives

(Etikan, 2016). In this case, the researcher chose to focus on the oil and gas companies listed on the Ghana Stock Exchange, namely Ghana Oil, Total Petroleum and Tullow Oil. These companies represent the major players in the oil and gas sector in Ghana, and their financial performance and reporting practices are of interest to various stakeholders, such as investors, regulators, auditors and the public. By using this sampling technique, the researcher aims to obtain rich and reliable data that can address the research questions and hypotheses regarding the effect of working capital management and earnings management on profitability.

3.4 Data Collection Method

The data collection method for this study is secondary data analysis. Secondary data analysis is a research method that involves using existing data from previous studies or sources to answer new research questions (Creswell, 2014). Secondary data has several advantages, such as saving time and money, increasing the sample size and diversity, and enhancing the validity and reliability of the findings (Leedy & Ormrod, 2015). For this study, the secondary data was obtained from the financial statements of the selected oil and gas companies listed on the Ghana Stock Exchange (GSE) for a 10year period from 2009 to 2018. The financial statements were accessed from the websites of the companies and from the Ghana Annual Report website. The data for each variable (working capital, earnings management, and profitability) was extracted and entered into an Excel file for analysis.

3.5 Measurement of Variables

3.5.1 Dependent Variables

The dependent variables for this research is financial performance, measured by Return on Equity (ROE) and Return on Assets (ROA).

- a. ROE** measures the income generated for ordinary shareholders after preference shareholders have been paid their dividends. It shows the profit generated per cedi of ordinary shareholders' capital invested (Singhania et al., 2012).

$$ROE = \frac{\text{Profit After Tax}}{\text{Equity (Ordinary Share Capital—Reserve)}}$$

b. **ROA** measure the efficacy of administration in utilizing the assets of the firm to make returns/incomes. Naturally, it shows what income/earnings were generated from invested capital. The higher the figure, the better as it shows that the firm is earning more income on less capital invested (Singhania et al., 2012).

$$ROA = \frac{\text{Profit After Tax (Net Income)}}{\text{Total Assets}}$$

3.5.2 Independent Variables

a. Cash Conversion Cycle

Cash conversion cycle is used as independent variable in this research which was gauged as days of sales unsettled plus days of asset outstanding less days of payable outstanding.

$$CCC = ADI + ADR - ADP$$

b. Average Days Inventory (ADI)

Average Days Inventory is obtained by dividing the company's inventory by cost of sales multiplied by 365 days. This indicates the usual number of days a firm is holding its inventory.

$$ADI = \frac{\text{Inventory}}{\text{Cost of Sales}} * 365$$

c. Average Days Receivable (ADR)

Average Days Receivable is obtained by dividing a company's accounts receivables by sales multiplied by 365 days. The results present the usual number of days the firm takes to collect receivables from customers.

$$ADR = \frac{\text{Account Receivables}}{\text{Sales}} * 365$$

d. Average Days Payable (ADP)

Average account days payable is measured by dividing accounts payable of a firm by the cost of sales multiplied by 365 days. The estimate indicates the average number of days it takes the firm to pay its trade creditors.

$$ADP = \frac{\text{Accounts Payable} * 365}{\text{Cost of Sales}}$$

e. Discretionary Accruals (DA)

In checking proportion of the controlled earnings, total accruals (TA) are divided into discretionary accruals (DA) and Non-Discretionary Accruals (NDA). Discretionary accruals are thus measured as the variations among total accruals and non-discretionary accruals (Sawarni et al., 2022).

Mathematically, $TA = DA + NDA$

$$DA = TA - NDA$$

However,

T

$$\frac{\Delta \text{Noncash current assets} - \Delta \text{Current liabilities excl. long term debt Depreciation and Amortization}}{\text{Lagged Total Assets}}$$

$$NDA = a_0 \frac{1}{A_{t-1}} + a_1(\Delta REV_t - \Delta REC_t) + a_2 PPE_t$$

Where;

ΔREC_t is variation in receivables when moving from t-1 to period t scaled by lagged total assets A_{t-1}

is total lagged assets

ΔREV_t is change in revenue when moving from t-1 to period t scaled by lagged total assets

PPE_t is gross property, plant, and equipment scaled by lagged total assets a_0, a_1, a_2 = firm specific parameters

3.5.3 Control variables

a. Firm Age

Firm Age is gauged as a natural log of firm age. The age of the firms measures the total number of years the listed firms have been operating. The basic idea is that firms who have operated for a longer period of time can increase performance due to their cast knowledge in the industry.

b. Firm Size

Firm Size refers to assets owned by the firms. When firms have high assets ownership, it enables them to deliver more low-cost transactional services to their clients. The size of a firm is used to determine the number of services it can concurrently offer to its clients. Firm size affects profitability. This is because firms with large assets ownership enjoy economies of scale i.e., they can offer more services to their clients concurrently at a lower cost (Sawarni et al., 2022).

Table 3.1 Variable, Description and Measurement, and A-Priori Expectation of Parameters

Variable	Description and Measurement	A-Priori Expectation
FP	ROA/ROE	N/A
CCC	Cash conversion cycle measured as average days inventory plus average days receivable minus average days payable.	+/-
ADI	Average Days Inventory measured as the ratio of inventory to cost of sales times 365 days	+/-
ADR	Average days receivable measured as accounts receivable divided by sales times 365 days	+/-
ADP	Average days payable measured as the ratio of the accounts payable divided by cost of sales multiplied by 365 days	+/-
DA	Discretionary accruals is measured as the difference between total accruals and non-discretionary accruals	+/-

Age	Firm Age measured as the total number of years the firm has been in operation	+
Size	Firm Size measured as the natural log of total assets.	+

Source: Author's Construct (2023)

3.6 Data Analysis (Panel Data)

The researcher employed the Panel Data Estimation procedure to determine the association between working capital management, earnings management and financial performance. Panel Data method is any technique which is employed on models which consists of both cross-sectional and time series dimensions, and the application of regression models to models which are more intricate than those for simple cross-sectional data circles (Pesa & Festic, 2014). The main reasons for using Panel Data includes the premise that Panel Data is more enlightening (that is more variability, less co-linearity, more levels of freedom), evaluations are more effective. Again, it allows reviewing individual dynamics, gives data on time-ordering of event and allows directing for individual overlooked heterogeneity.

The functions are estimated using the panel data regression method with the help of STATA 14. Short (1979) and Bourke (1989) considered numerous functional systems and concluded that the linear model gives out comes as good as any other functional systems. It is therefore common to see that numerous literatures on financial performance have approved the linear functional form as a suitable form of analysis. A linear system will therefore be used in this research to examine the panel data.

3.6.1 Estimation Issues

The study used three econometric evaluation methods, namely pooled ordinary least squares, fixed effects and random effects, to assess the impact of working capital and earning management on profitability. In the most modest case, when there are no stable effects over time, the combination of

least squares is the most appropriate estimation method. However, because of the lasting effects, monitoring may vary from company to company, but the slope parameters to be determined are limited for all companies and for all time periods. The constant effects model rediscovers the relationships between independent and explanatory variables in individual firms when firms have their own characteristics that influence the relationship between the variables.

The basis of the random effects model is that, unlike the fixed effects model, the inequality between individuals is assumed to be arbitrary rather than phase-based, and descriptive variables are included.

The study then uses the test specification of Hausman (1978) and selects a model to evaluate both static and random effects, which best explains the evaluation.

3.7 Model Specification

According to Bruderl (2005) a general linear form of panel data can be written as:

$$Y_{it} = \alpha_{it} + X_{it}\beta_i + \ell_{it} \quad (1) \text{ Where the error}$$

term is explained as follows:

$$\ell_{it} = \mu_i + \lambda_t + \varepsilon_{it} \quad (2)$$

Where i characterises cross-sectional dimension and t is time-series dimension. This means that the same information on a cross-section of listed firms surveyed over time and across space. Y_{it} is the dependent variable in the model. X_{it} represents the independent variable. ℓ_{it} represents the error term, α_{it} is the intercept and β_i is the coefficient in the model whilst μ represents the firm specific effect.

However, to accomplish the aims of this research, a financial performance model is quantified. The functional forms of the model to be used in this study is standard in finance theory. Following Mbawuni et al. (2016), the researcher specifies the association between working capital, earning management and profitability as:

$$\begin{aligned} ROE = & \alpha + \beta_1 CCC_{it} + \beta_2 ADI_{it} + \beta_3 ADR_{it} + \beta_4 ADP_{it} + \beta_5 (DA * CCC)_{it} + \beta_6 (DA * ADI)_{it} \\ & + \beta_7 (DA * ADR)_{it} + \beta_8 (DA * ADP)_{it} + \beta_9 \sum_{j=1}^n Control_{ijt} + \mu_i + \lambda_t + \varepsilon_{it} \dots\dots\dots (3) \end{aligned}$$

$$\begin{aligned} ROA = & \alpha + \beta_1 CCC_{it} + \beta_2 ADI_{it} + \beta_3 ADR_{it} + \beta_4 ADP_{it} + \beta_5 (DA * CCC)_{it} + \beta_6 (DA * ADI)_{it} \\ & + \beta_7 (DA * ADR)_{it} + \beta_8 (DA * ADP)_{it} + \beta_9 \sum_{j=1}^n Control_{ijt} + \mu_i + \lambda_t + \varepsilon_{it} \dots\dots\dots (4) \end{aligned}$$

$$\begin{aligned} TOBIN'S\ Q = & \alpha + \beta_1 CCC_{it} + \beta_2 ADI_{it} + \beta_3 ADR_{it} + \beta_4 ADP_{it} + \beta_5 (DA * CCC)_{it} + \beta_6 (DA * ADI)_{it} \\ & + \beta_7 (DA * ADR)_{it} + \beta_8 (DA * ADP)_{it} + \beta_9 \sum_{j=1}^n Control_{ijt} + \mu_i + \lambda_t + \varepsilon_{it} \dots\dots\dots (5) \end{aligned}$$

Where ROE/ROA_{it} is the measure of financial performance of the i th firm at time t , $Control_{ijt}$ is the control variables i th firm at time t , CCC_{it} represent the cash conversion cycle of the i th firm at time t , ADI_{it} represent the measurement of average days inventory of the i th firm at time t , ADR_{it} is average days receivable of the i th firm at time t , ADP_{it} is average days payable of the i th firm at time t , DA_{it} is discretionary accruals of the i th firm at time t , α is the intercept and β is the value of the coefficient in the model whilst μ represents the firm specific effect.

3.8 Diagnostic Tests

This study made good use of Diagnostic Checks to test for stability and reliability of the econometric model used for the study. The check made use of various tests like test for multicollinearity and normality tests. The Shapiro-Wilk Test is done to check for a normality of the data. Finally, the correlation matrix is also used to determine if none of the variables were perfectly correlated with each, thus check for the presence of multicollinearity.

CHAPTER FOUR

RESULTS AND DISCUSSIONS

4.0 Introduction

This chapter presents the results and discussion of the findings to achieve the research objectives. The data was analyzed in terms of the random effect regression with the help of Stata version 14. The first section deals with the explanation for the study variables. The second part deals with the discussion of the results using descriptive statistics. The third section performs a correlation analysis to examine the extent to which the variables are interrelated with each other. The fourth section also deals with model selection and regression results. The final section presents the tests of significance as well as the robustness tests of the regression model.

4.1 Study Variables

The study examined certain specific variables on working capital management, earning management and performance. The variables included: Return on Equity (ROE), Return on Asset (ROA), Cash Conversion Cycle (CCC), Average Days Receivable (ADR), Average Days Payable (ADP), Discretionary Accruals (DA), Firm Age (Age), Size (Size), GDP Growth (GDPG) and Interest rate (INT). As stated in the previous chapters, the dependent variables are Return on Equity and Return on Asset, whereas the independent variables include: Cash Conversion Cycle, Average Days Receivable, Average Days Payable, Discretionary Accruals, Age, Size, GDP Growth and Interest rate. The results of the regression are extensively discussed.

4.2 Descriptive Statistics of Variables

This section presents the descriptive statistics of the dependent and independent variables of the study.

Suitably, Table 4.1 reports the mean; minimum, maximum, standard deviation of dependent variables and independent variables of the oil and gas firms that are found on the Ghanaian Stock Exchange from 2009 – 2018 are demonstrated as follows.

Table 4.1: Descriptive Statistics on Working Capital Management, Earnings Management and Profitability

Variable	Observation	Mean	Std. Dev.	Minimum	Maximum
Returns on Equity	30	0.202	0.110	0.121	0.407
Returns on Asset	30	0.065	0.034	0.005	0.143
Cash Conversion Cycle	30	106.559	145.484	0.261	462.442
Average Days Receivables	30	37.463	10.805	3.494	56.331
Average Days Payable	30	172.124	171.495	45.147	630.017
Discretionary Accruals	30	-2.870	17.034	-34.924	54.770
Age	30	3.287	0.904	1.386	4.094
Size	30	12.418	3.195	8.076	19.646
GDP Growth	30	6.977	3.372	3.700	15.008
Interest rate	30	27.975	3.925	21.815	34.500

Source: Computed by author using STATA 14

It can be observed from Table 4.1 that on the average, Returns on Equity of the oil and gas firms over the years is approximately 0.202. This implies that for every GHS1 equity owned, the equity holders receive about GHS0.202 in returns, which indicates that over the years, the firms have performed better by increasing the value of equities held by shareholders. Average Returns on Asset is approximately 0.065. This means that for every GHS1 asset owned, the respective oil and gas firms achieve about GHS0.065 returns, which is an indication that the sampled firms are not performing well in terms of their asset base. Over the period under study, the cash conversion cycle for the listed oil and gas firms recorded a mean value of 106.55. This record suggests that the firms uses about 106 days to convert investments in trade receivables and stocks into cash flows from sales. This period is

considered as a very lengthy period, which requires further investigation and analysis based on other factors and the effects it may have on the operations of the companies.

The average days receivables for the firms was 37.463. This implies that the firms use about 37 days to collect receivables from customers. Using about a month and a week to collect receivables from debtors is considered as positive receivables management technique adopted by the firms. This may to a large extent reduce the potential risks that may arise from recoveries. Average days payable recorded a mean value of 172.24 for the listed oil and gas firms over the period under study. This mean value suggests that the firms uses about 5 months and 1 week to pay off their creditors. This could have adverse effects on the operations of the company as these firms could be tagged as “not credit worthy” and might therefore not receive goods on credit from their suppliers. Over the years, the mean value of discretionary accruals for GOIL, TOTAL and TULLOW remained -2.87. This negative mean value suggests that on the average, these listed oil and gas firms manipulated accruals downwards (income decreasing accruals). However, a positive standard deviation of 17.04 accounted for the variation between minimum and maximum discretionary accruals value of -34.92 and 54.77 respectively.

The mean age of the firms is approximately 32 years, which implies that, the listed oil and gas firms have been in Ghana for a long period of time and are therefore deemed to be conversant with the market system, which may have positive implications with regards to creating value for shareholders. The mean size of the firms is 12, suggesting that listed firms can offer about 12 different services and products to their clients concurrently. Annual average GDP Growth rate was 6.97% within the periods under study. Variation was 3.37 for GDP Growth rate of Ghana. This GDP Growth rate value indicates a steady increase in the rate of growth of the total market value of the economy within the country over the period under study. The impact on profitability may be positive realising the benefits received by oil and gas firms by increase in sales because of an expanded economy.

Lastly, interest rate was about 27.97% over the period under study. The higher interest rates as compared to those of the advanced economies can be attributed to the higher government borrowing and depletion of foreign exchange reserves by government and various interest rate regulations in the country.

4.3 Correlation Matrix of Variables

Correlation refers to one of the most important categories of statistical relationships, usually the extent to which two variables are linearly related. Since correlation can reveal a predictive association that can be learned in practice, it is considered purposeful. There are various correlation coefficients, usually known as ρ or r that measures the degree of correlation. The most general is the Pearson correlation coefficient, which responds only to a linear association among two variables. The stronger the correlation among the variables, the closer the coefficient is to -1 or 1.

Table 4.2 shows an analysis of the correlation between working capital management, profit management and profitability. There is a strong negative linear correlation among average number of days paid and return on equity, 0.546. At -0.361, -0.411, -0.356, -0.043 and -0.422, cash conversion cycle, average number of days paid, discretionary accumulation, GDP growth and interest rate have a weak but negative correlation with profitability. However, firm size and age appeared to be positively correlated with shareholder return ratios of 0.454 and 0.280, respectively. A cursory examination of the correlation results shows that none of these variables is perfectly correlated with the others. However, since correlation does not imply causality, the researcher conducted a regression analysis of the panel data to assess the actual impact of the working capital and earnings management parameters on the profitability of listed oil and gas companies in Ghana.

Table 4.2: Correlation Analysis

	ROE	ROA	CCC	ADR	ADP	DA	Age	Size	GDPG	INT
ROE	1.000									
ROA	0.918	1.000								
CCC	-0.361	-0.361	1.000							
ADR	-0.546	-0.475	-0.166	1.000						
ADP	-0.411	-0.399	0.993	-0.074	1.000					
DA	-0.356	-0.213	0.076	0.341	0.095	1.000				
Age	0.454	0.397	-0.912	0.101	-0.922	-0.117	1.000			
Size	0.280	0.136	-0.679	-0.025	-0.697	-0.317	0.682	1.000		
GDPG	-0.043	0.040	-0.008	0.122	0.025	-0.182	-0.042	-0.116	1.000	
INT	-0.422	-0.479	0.024	0.403	0.051	0.096	0.022	-0.091	-0.143	1.000

Source: Computed by author using STATA 14

4.4 Model Selection: Pooled OLS/Fixed Effects versus Random Effects Model

The objective of this model was to explore the influence of working capital and earnings management on the financial performance of listed oil and gas companies in Ghana using a panel data regression model which can be a constant or random effect model. The study used the Hausman test to determine whether the OLS model is for constant or random effect. The random effect is correlated with the independent variable, while the constant effect is not correlated with the variables. The decision principle of Hausman specification tests is to reject the null hypothesis at the p-value. Although the results of the Hausman tests do not show an asymptotic difference between fixed and random effects, the researcher uses the combined OLS model but runs all the necessary tests around the classical linear regression assumptions to ensure that the results are robust and thus consistent with policy recommendations.

Table 4.3 Results of the Hausman Test

Regressors	<u>ROE</u>		<u>ROA</u>	
	FE	RE	FE	RE
Cash Conversion Cycle	-0.033	-0.040	-0.033	-0.010
Average Days Receivables	-0.078	-0.085	-0.078	-0.024
Average Days Payable	0.068	0.109	0.068	0.015
Discretionary Accruals	-0.001	-0.001	-0.001	-0.004
Age	0.100	0.009	0.100	0.020
Size	-0.002	-0.008	-0.002	-0.005
GDP Growth	-0.004	-0.006	-0.004	-0.001
Interest rate	-0.009	-0.010	-0.009	-0.003
	Chi(2) = 1.09		Chi(2) = 14.86	
	P-Value = 0.99		P-Value = 0.061	

Source: *Computed by author using STATA 14*

From Table 4.3, the p-value of the Hausman Test for both equity and asset returns is 0.99 and 0.06 greater than the 0.05 level of significance. This indicates that the random effects model is appropriate for the discussion of the results.

4.5 Results of the Regression Analysis

The study seeks to empirically investigate the impact of working capital and earnings management on profitability. In this regards, the author estimates an econometric model that relates profitability to the identified variables under working capital and earnings management (which are the main variables of interest), firm-specific variables as well as the macroeconomic factors that may possibly affect profitability. The parameters applied to regression analysis were estimated in two fields. Firstly, model 1 is show the association among working capital management and profitability as well as earnings management and profitability using ROE as the dependent variable and secondly, model 2, which specifies the relationship using ROA as the dependent variable.

The tests as shown in Table 4.4 indicate an R^2 of 0.680 implying that, about 68% of the difference in equity returns is mutually defined by all the variables: cash conversion cycle, average days receivables, average days payable, discretionary accruals, age, size, GDP growth and interest rate. This shows that about 32% of the variation of equity returns can be explained by other variables outside the model. Also, with the keyed Wald χ^2 (44.76) more than the critical F (0.000), the regression was statistically significant. With regards to this, cash conversion cycle, average days receivables, average days payable, discretionary accruals, age, size, GDP growth and interest rate are jointly significant in explaining the variation in profitability over the period 2009-2018.

Table 4.4: Estimated Results of the Random Effects of Working Capital and Earnings Management on Profitability.

Regressors	ROE	ROA
Cash Conversion Cycle	-0.040** (-2.19)	-0.010* (-1.77)
Average Days Receivables	-0.085*** (-2.65)	-0.024** (-2.31)
Average Days Payable	0.109 (1.61)	0.015 (0.69)
Discretionary Accruals	-0.001** (-2.13)	-0.004 (-1.34)
Age	0.009** (2.09)	0.020 (1.31)
Size	-0.008 (-1.22)	-0.005** (-2.12)
GDP Growth	-0.006 (-1.39)	-0.001 (-0.87)
Interest rate	-0.010** (2.55)	-0.003*** (-2.67)
Overall R^2	0.680	0.683
Wald χ^2	44.76	37.09
Prob. (χ^2)	0.000	0.000

*The figures in parenthesis (...) and square brackets [...] are standard errors and t-statistics respectively. ***, ** and*

** denote statistical significance at 1%, 5% and 10% respectively.*

Source: Computed by author using STATA 14

4.5.1 The Impact of Working Capital Management on Financial Performance

Table 4.4 presents that the coefficient of the cash conversion cycle is negative for return on equity and return on assets, indicating a negative association among the cash conversion cycle and profitability. This ratio is statistically significant at 5%. The stage of this ratio under constant conditions, which increase the conversion of investments in loans and inventories to cash flow from sales by 1%, will result in a 4% decrease in shareholder value. This result is consistent with the work of Vuran and Adiloglu (2018), which showed that the cash conversion cycle negatively impacts profitability when the value of working capital investments grows quicker more than the advantages of large inventories or generous trade receivables, meaning that other investments are unlikely to generate these cash flows.

The average number of days to be received statistically significantly negatively influenced return on equity of 1%. This means that the average number of collection days is an important factor determining economic performance, so an increase in the number of collection days per day is expected to reduce profitability by approximately 8.5%. Vuran and Adiloglu (2018) stressed that the main objective of managing the average days of overdue sales is to ensure the timely collection of receivables. Although granting credit terms can increase sales volume, there is a risk that NPLs will also increase profitability.

The average day's payable term is positive, but not significant in terms of return on capital and assets. This means that while average days payable and profitability are moving in the same direction, the number of days that publicly traded oil and gas companies use to repay their borrowed assets is not a factor in determining the returns earned by their shareholders, in contrast to the findings of Nyachwaya (2019) where a statistically significant correlation between accounts days payable and profitability was found.

4.5.2 Effects of Earnings Management on the Profitability of Listed Oil and Gas Companies

Table 4.4 presents that the percentage of discretionary increases is negative, indicating that earnings management has a negative effect on profitability. This association is statistically significant at 5% error stage. The otherwise unchanged size of the ratio is translated upwards by manipulating the profit to reduce the financial results of listed companies by about 1%. This result is consistent with that of Wassie (2021), which documents a positive correlation between discretionary income and financial performance. The study therefore concludes that potential investors should critically review the financial statements of companies to avoid investing in companies that manipulate profits.

From table 4.4, the coefficient of cash conversion cycle is negative for both equity and asset returns, recommending that there is a negative association among cash conversion cycle and profitability. This association is revealed to be statistically significant at the 5% degree. The size of the coefficient, *ceteris paribus*, improving the conversion of investments in trade receivables and stocks into cash flows from sales by 1 percent will result in a reduction of equity holders' value by 4%. This finding is consistent with the works of Vuran and Adiloglu (2018) who reported that cash conversion cycle impacts adversely on profitability when the cost of the investment in working capital rises faster than the benefits of having a large inventory or generous trade credit, which implies that there will be relative low chance for other investments of this cash flow.

Average days receivables have a statistically significant negative impact on equity returns at 1% level of significance. This means that the average days receivable is an important determinant of financial performance such that increasing collection of trade receivables by a day is meant to worsen profitability by about 8.5%. in the same vein, Muya and Gathogo (2016) instigated that the main objective of managing average receivable days is to see to it that debts are received within specified terms.

However, whilst longer credit terms may increase turnover, there is also the possibility of an increased risk of bad debts affecting profitability. Average days payable has a positive, but insignificant relationship with returns on equity and asset. This means that, although average days payable and profitability move in the same direction, the number of days listed oil and gas firms use to pay for the goods purchased on credit are not significant in determining the returns earned by equity holders of these firms. This result contrasts the findings of Nyachwaya (2019) who found out a statistically significant relationship between account days payable period and profitability.

4.5.2 The Effect of Earnings Management on the Profitability of Listed Oil and Gas Companies

From Table 4.4, the coefficient of discretionary accruals is negative, suggesting that earnings management has a negative impact on profitability. This relationship is found to be statistically significant at 5% error level. The magnitude of the coefficient, all other things being equal, manipulating earnings upwards is found to lessen the financial performance of listed oil and gas firms by approximately 1%. This finding is consistent with the works of Muya and Gathogo (2016) who documented a positive relationship between discretionary accruals and financial performance. The study therefore concluded that prospective investors must critically analyse financial statements of firms to avoid investing funds into firms that engage in earnings manipulation.

4.5.3 Firm-Specific and Macroeconomic Indicators of Financial Performance

The age of companies has a positive and statistically significant impact on their financial results. This means that older companies generally achieve better results than those that have been absent from the market for a long time. The reason for this is that older listed companies are more aggressive and innovative in their operations.

In addition, young listed companies have to learn new ways of working through trial and error, while recognized institutions can benefit from the knowledge gained in previous years and always try to do better. This is in line with the findings of Hermes and others (2009), but in contrast to other studies

(Dudutari et al., 2023;). The size of listed companies has a negative and statistically significant impact on capital results. The results show that financial results increase with increasing company size. This result is statistically significant at 5%, which is consistent with the compensation theory that large companies tend to be more diverse in the management of working capital and therefore less prone to bankruptcy than companies with less developed capital management techniques, which is usually reflected in their return on capital.

GDP growth is negative, indicating the inverse relationship between GDP growth and profitability. This association is statistically insignificant - 5%. This indicates that GDP and profitability are not so closely linked that changes in GDP growth do not affect the profitability of oil and gas companies. This result is not in line with theoretical predictions about the positive impact of the economy on profitability and is consistent with the findings of Dudutari et al. (2023), who noted that in the African context, most companies are unable to manage their credit, even during periods of economic growth when the economy is recovering.

Interest rates have had a negative and statistically significant impact on profitability. This means that higher interest rates have had a negative impact of 1% on the profitability of publicly traded oil and gas companies, which is significant at 5%. This result could be due to the fact that listed oil and gas companies are heavily dependent on loans and other forms of prepayment for their operations. As a result, they suffer from the need to pay additional amounts to cover both principal and interest, which affects their operating results.

4.5.4 The Relationship between Discretionary Accruals and Cash Conversion Cycle.

Table 4.5 presents the regression analysis on the relationship between discretionary accruals and cash conversion cycle. Essentially, the researcher performs a Hausman Test to determine which model (fixed or random) is appropriate for the discussion of the findings. The Hausman test indicates a

pvalue of 0.054, greater than 0.05 leading to the use of random effects regression model as the most appropriate model for analysis.

The results of the random effects regression indicate a negative but statistically insignificant relationship between discretionary accruals and cash conversion cycle. As such, manipulating earnings downwards does not have any influence on the ability of oil and gas firms to convert their investment in trade receivables and stocks into cash flows from sales. This result is in contrast with the findings of Raza et al. (2015) who admits that users of the accounting report including employees and senior executives make decisions based on reported earnings. As such discretionary earning significantly influence working capital decisions of a firm.

With regards to the control variables, age of the firms and GDP growth rate was found to have a statistically significant negative impact on cash conversion cycle. This implies that older firms tend to be cautious when fixing income in receivables and stock than younger ones which may be as a result of increased knowledge in the market.

Table 4.5: Regression Results on Discretionary Accruals-Cash Conversion Cycle Relationship

Regressors	Pooled OLS	Fixed Effects	Random Effects
Discretionary	-0.013	-0.016	-0.013
Accruals	(-0.95)	(-1.17)	(-0.95)
Age	-2.104***	0.380	-2.104***
	(-6.45)	(0.43)	(-6.45)
Size	0.004	-0.009	0.004
	(0.05)	(-0.07)	(0.05)
Inflation	-0.126	-0.05	-0.126
	(-1.31)	(-0.64)	(-1.31)
GDP Growth	-0.218**	-0.133	-0.218**
	(-2.05)	(1.31)	(-2.05)
Overall R ²	0.768	0.202	0.768

F-Stat/Wald Chi ²	15.89	4.78	79.44
Prob. (Chi ²)	0.000	0.018	0.000
Hausman Test	N/A	Chi ² = 10.85	
		P-Value = 0.054	

*The figures in parenthesis (...) and square brackets [...] are standard errors and t-statistics respectively. ***, ** and * denote statistical significance at 1%, 5% and 10% respectively.*

The tests as reported in Table 4.5 indicate an R^2 of 0.768 meaning that, approximately 76.8% of the variation in cash conversion cycle is jointly explained by all the variables: discretionary accruals, age, size, inflation and GDP growth. This indicates that, approximately 23.2% of the variation of cash conversion cycle can be explained by other variables outside the model. Also, with the computed Wald Chi² (79.44) exceeding the critical F (0.000), the regression was statistically significant. In view of this, discretionary accruals, age, size, inflation and GDP growth are jointly significant in explaining the variation in cash conversion cycle over the period 2009-2018.

4.6. Diagnostic Tests

Table 4.6 reports the results of the diagnostic test for the estimated models. The correlation matrix presented in Table 4.2 indicated that none of the variables were perfectly correlated with each other, hence, the model does not suffer from the problem of multicollinearity.

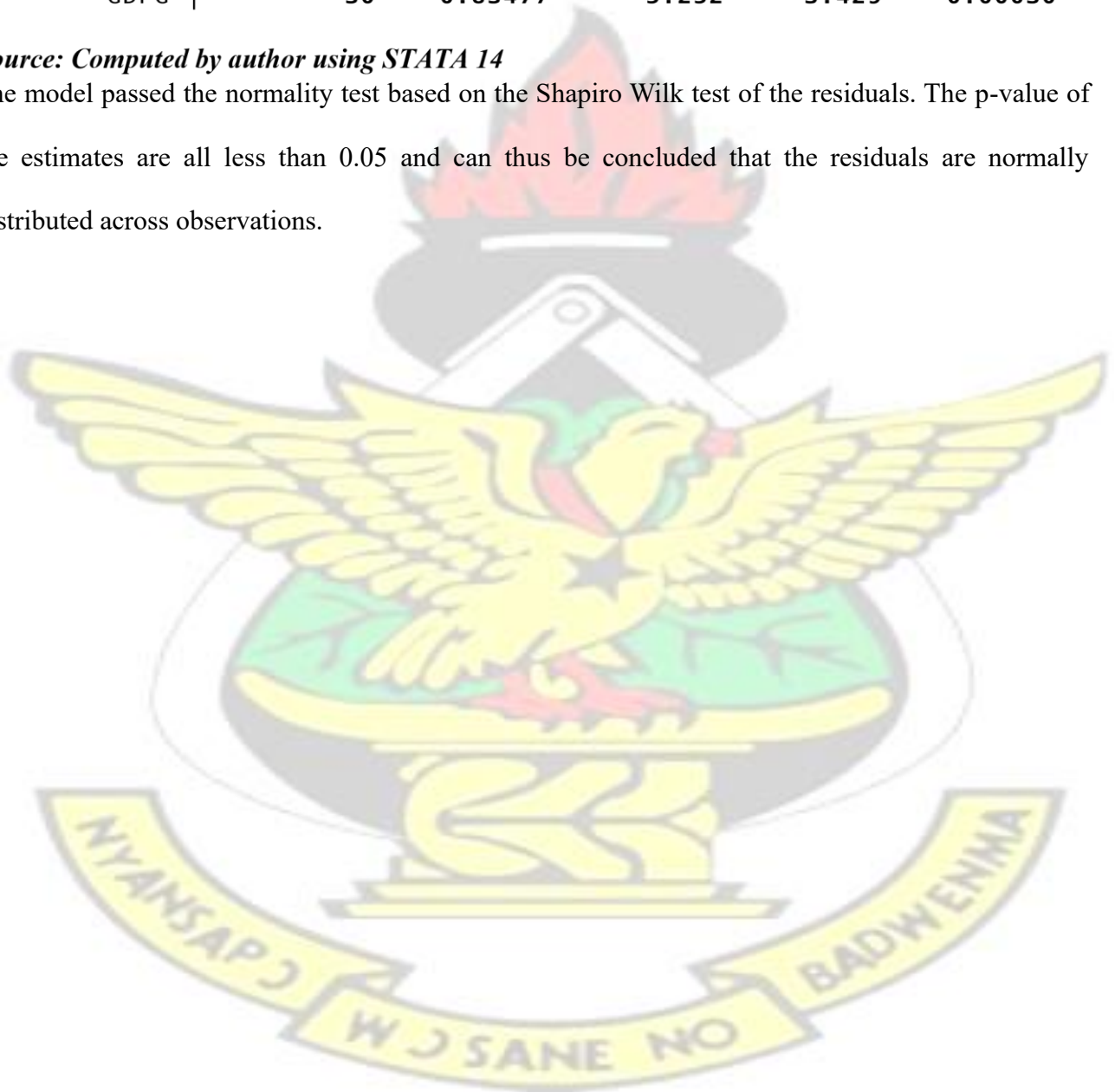
Table 4.6: Diagnostic Tests

Shapiro-Wilk W test for normal data

Variable	Obs	W	V	z	Prob>z
CCC	30	0.72830	8.636	4.458	0.00000
ADR	30	0.89713	3.270	2.450	0.00715
ADP	30	0.72817	8.640	4.459	0.00000
DA	30	0.78336	6.886	3.990	0.00003
Age	30	0.77612	7.116	4.058	0.00002
size	30	0.86711	4.224	2.979	0.00145
GDPG	30	0.83477	5.252	3.429	0.00030

Source: Computed by author using STATA 14

The model passed the normality test based on the Shapiro Wilk test of the residuals. The p-value of the estimates are all less than 0.05 and can thus be concluded that the residuals are normally distributed across observations.



CHAPTER FIVE

SUMMARY OF FINDINGS, CONCLUSION AND RECOMMENDATION

5.0 Introduction

This aim of the final chapter is aimed at presenting the empirical results of the research and for aims of policy implementations, suggesting recommendations capable of raising profitability of oil and gas firms listed on the Ghana Stock Exchange. The chapter is in four main sections. Section 5.1 presents a summary of the findings. Policy recommendations are given in section 5.2 and concluded in section 5.3. Lastly, section 5.4 presents the suggestions for further research.

5.1 Summary of Key Findings

The research studied the impact of working capital and earnings management on financial performance of listed oil and gas firms over the period 2009 - 2018. This was done through descriptive statistics, correlation analysis and regression analysis. Below is the summary of significant outcomes from the analysis:

With regards to the objective One: The study has revealed that cash conversion cycle negatively related to the profitability of the all listed oil and gas firms and a significant relationship was seen at 5% significance level.

Concerning the objective Two: The study found that discretionary accruals (earnings management) was found to have a negative and statistically significant impact on financial performance of the selected firms. The significance level is 5%.

Regarding the objective Three: The study found that discretionary accruals and cash conversion cycle were not statistically related. This suggests that manipulating earnings downwards does not have any impact on period that cash is fixed up in accounts receivables and inventory.

5.2 Conclusion

In recent years, most researchers have examined the influence of management and efficiency on working capital. This is mainly due to their contribution on the importance of good working capital management for business success. This study does not consider the role that yield management can play in financial performance. The study concluded that it is not only good working capital management that increases efficiency, but also good interest income management. Therefore, the aim of the research was to explore the effect of working capital and profit management on the financial performance of oil and gas companies listed on the Ghana Stock Exchange. The survey estimated the profitability function for all oil and gas companies listed on the Ghana Stock Exchange over a 10year period from 2009 to 2018 using a panel data estimation method. The estimated outcomes indicates that depending on the elements of working capital management, the cash conversion cycle and the average number of days to collect have a statistically significant negative impact on the financial performance of the companies. However, the average number of days to pay is not significant in determining profitability. Discretionary accruals were also found to have a negative impact on profitability. It can be concluded that not only do current asset items have an impact on financial performance, but also profit management can have a negative impact on profitability.

5.3 Recommendation

Prior to this section, the researcher wishes to suggest the following recommendations based on the findings, with the hope that it would go a long way to help policymakers to configure comprehensive policies that will ensure an excellent management of working capital, earnings and consequently improve upon financial performance.

1. It is revealing from the study that when period of days used by listed oil and gas firms to fix cash in trade receivables and inventories increases, profitability worsens. The researcher therefore suggests sampled firms formulate appropriate and sound policies that will govern their cash conversion cycle. This will ensure that they more cash is not fixed into inventories and receivables over a longer period of time, which may lead to an improvement in the financial performance.
2. The researcher wishes to indicate that average number of days receivable and financial performance was found to be inversely related. Hence, it is recommended that senior executives of listed oil and gas firms must not ensure that their finance officers strive as much as possible to collect all their trade receivables early. This will make enough funds available for purchases of goods, thereby improving on operating profit.
3. The results suggest that manipulating earnings upwards reduces equity returns. The researcher therefore suggests efforts by internal audit unit of the oil and gas firms to ensure accurate reporting by the finance executives. To prospective shareholders, the study recommends a thorough analysis of financial statements to include earnings management of firms to avoid investing funds into firms that suffer from going concern problems.
4. The study confirmed a significant link between firm size and equity returns. This indicates that management must adopt and pursue appropriate policies that will ensure an improvement in the sales or asset base of the firm, which can be done through innovative products and extensive marketing.

5.4 Suggestion for Further Studies

The researcher would like to indicate that variables used in this study are not exhaustive. Variables like average inventory days and sales index, are not considered in the study. Again, the study is limited to only oil and gas firms listed on the Ghana Stock Exchange. In view of this, it is recommended that further research be extended to other oil and gas firms that are not listed on the Ghana Stock Exchange

considering the identified variables to investigate whether other non-listed firms are different with regards to how working capital and earnings management affects their profitability.

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