EFFECTS OF MERGERS AND ACQUISITIONS ON FINANCIAL PERFORMANCE OF PETROLEUM COMPANIES IN KENYA

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DECLARATION

I, Joan Wang'ombe hereby declare that this is my original work and has not been submitted for presentation and examination for any award of degree in this university or any other.

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D61/77161/2015

This research project has been submitted for examination with my approval as University Supervisor.

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DEDICATION

This research is dedicated to my family for their moral support, and sacrifice throughout my MBA course. May God bless you all!

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ABBREVIATIONS AND ACRONYMS

BP   Breusch-Pagan

ERC   Energy Regulation Commission

LSE   London Stock Exchange

M &A   Mergers and Acquisitions

ROA   Return on Assets

ROE   Return on Equity

SPSS   Statistical Package for Social Sciences

SW   Shapiro Wilk

VIF   Variance Inflation Factor

ABSTRACT

The business environment is rapidly evolving and this has forced firms to adopt survival strategies to cope up with these changes. M&A is a concept that has attracted attention of most firms as a way of turning around firm performance through synergy, resources sharing, technical know-how and management competencies. This study was set out to determine the effect of M&A on financial performance of petroleum companies in Kenya. The study adopted a descriptive research design to establish hypothetical relationship that exists between variables as supported by agency theory, resource-based theory and free cashflow theory. The target population involved 4 petroleum firms that were involved in M&A in the period between 2000-2017. The study covered a duration of 6 years; 3 years pre and 3 years post M&A. The year of M&A was deemed to be zero. Secondary sources of data were obtained from NSE and financial statements of individual petroleum companies. Data analysis was carried out using descriptive statistics and paired t-test and the study found that M&A led to an increase of all the study variables: debt-to-equity ratio, ROE, liquidity and operational efficiency. This was a consequence of a combination of assets, resources; technology and management competencies. The research also concluded that size of the firm and liquidity level was statistically significant which meant that M&A had an effect on financial performance of petroleum companies. The study recommends that the need for petroleum companies to continue practicing M&A to improve on their performance; and gain from technical skills and technological resources. The study limited itself to a descriptive research design that cannot enable the researcher to establish 'cause and effect' relationship between variables. Although the study established the nature of relationships amongst variables, it did not establish the causal effects amongst M&A and financial performance of petroleum companies. The current study is mirrored on petroleum companies in Kenya. A replica of this research needs to be conducted in a different sector that is similar in size and areas of intervention, and then the researcher can compare findings upon which a plausible conclusion will be drawn.

CHAPTER ONE

INTRODUCTION

1.1 Background of the Study

The environment where firms do business is characterized by many changes driven by external factors mainly technology and globalization, these changes expose firms to fierce competition (Maditinos, Theriou & Demetriades, 2009). In an attempt to counter these changes and take advantage of opportunities, firms are adopting strategic responses for example, mergers and acquisitions, strategic alliances among others to effectively cope with the environment (Ismail, Abdou & Annis, 2012). However, mergers and acquisitions is a popular strategy which is increasingly used by firms across the world. The choice of this strategy is because working with other firms has more benefits than working alone, firms are able to improve efficiency, minimize operational costs, increase asset base, equity holding and profitability (Moktar & Xiaofang, 2014).

Agency Theory, Free Cashflow Theory and Resource-based Theory are theories anchoring this study. According to Jensen and Meckling (1976), agency relationship is a contract in which the principal(s) hires another person (agent) to execute tasks on their behalf. In this case, agents are trusted in making certain decisions and expected to act in the best interests of the principal. Free Cashflow Theory states that when the firm has excessive cashflows, it can easily fund projects that promise positive net present values and boost firm's profitability (Murphy, 2013). Resource-Based Theory insists on the need for effective management of internal resources of the firm with a view of identifying those assets, capabilities as well as competencies that have potential to achieve superior performance than competitors (David & Cynthia, 1995).

In Kenya, Petroleum companies operate in an increasingly competitive environment, these is forcing these firms to engage in mergers and acquisitions to boost firm value and profitability (Mboroto, 2013). Petroleum sector is not an exempt from this trend, thus this has led to mergers and acquisitions in this sector. It is therefore important to find out the effect that these mergers and acquisitions have on financial performance of Petroleum companies in Kenya.

1.1.1 Mergers and Acquisitions

Although there are differences between the terms mergers and acquisitions, people have a tendency of using the two interchangeably. A merger is a combination of at least two firms into one larger firm. For firms to merge there are certain voluntary actions that lead to this title, which is characterized by a combination of the original names (Maditinos, Theriou & Demetriades, 2009). On the other hand, an acquisition involves the purchase of a firm by another. The process of acquisition might be friendly or hostile, and acquiring firms maintain control over the acquired firm. A consolidation differs from mergers and acquisitions since it entails a business combination where at least two firms join to form an entirely new firm. According to Ismail et al. (2012), all the combining firms dissolve and the new firms resumes with operations. Moktar and Xiaofang (2014), it is possible to achieve a merger through acquisition, where in such a case, the shareholders of the acquired firm are paid off and the new owner becomes the acquirer with a significant holding of the acquired firm assets. Hewitt, Gilbody and Brealey (2009), notes that American firms reported over 1.7 billion on acquisitions and mergers. According to Sudarsanam (2013), the fundamental reason that drives firms to engage in mergers and acquisitions is to enhance the value of shareholders. Most of the firms that engage in mergers and

acquisitions see it as an opportunity to lead in product-market area of the business strategic unit.

According to Kaserer and Moldenhauer (2012), samples of both financial and corporate buyers reveal that mergers and acquisitions lead to superior performance. The ability of mergers and acquisitions to improve competitive advantage by reducing business risk and increasing market share make this strategy popular globally (Kithitu et al., 2012). As a result on an increase in the value of shareholders, the performance of firms after merger or acquisition leads to improved performance (Sharma, 2009). Firms going for mergers and acquisitions are motivated by factors such as economies of scale, tax reduction, and revenue enhancement. Emy and Sahibzada (2016) argue that firms engage in M&A to enhance market power, minimize risks associated with product development and achieve economies of scale. M&A improves corporate growth and productivity. Measures of M&A are market share, revenue and shareholder value.

1.1.2 Financial Performance

Pandey (2004) defines financial performance as a process that involves examining the firm's policy and operations using economic parameters. Financial performance of a firm is determined using several measures for example return on assets (ROA), return on equity (ROE) and Penman (2007) indicates that financial performance is performance of a firm over a specific period of time which is determined by profits or losses. By examining the financial performance of a firm, decision-makers can ascertain the firm's strategic outcomes in monetary terms objectively. Financial performance is ascribed to a subjective measure of the firm effectiveness through asset utilization to generate revenue. This also applies to the assessment of overall

financial health of the firm over a given time period while making comparison with other players across the industry.

In measuring financial performance, various tools need to be applied to obtain the right results. Use of a single measure can hinder the firm from getting reliable and accurate results (Peterson & Kumar, 2010). Pandey (2007) acclaims that use of different sets of measures allows the firm to get a comprehensive assessment of its current performance. Peterson and Kumar (2010) indicate that return on equity (ROE) and ROA serve as two important measures utilized by financial institutions to assess financial measure. ROE is useful to investors in ascertaining whether there are any incomes derived from investments. Similarly, investors apply ROA to find out how well managers use firm's assets to generate income. This study will apply ROA to find out the level of efficiency by the managers in balancing and controlling internal and external factors in order to provide an enabling environment for firms to effectively use assets to generate income.

1.1.3 The Relationship between Mergers and Acquisitions and Financial Performance

The reason as to why mergers and acquisitions come into play is to improve the firms' competitive gain over its rivals, increasingly market share and resources to effectively serve a wider market. Masud (2015) explains that firms equally merge with an objective of expanding portfolio so as to diversify risks associated with the business; venturing new geographical locations and markets including economies of scale (Bansal & Kumar, 2008). Mahesh and Prasad (2012) researched on post-merger and acquisition on financial performance of selected Indian airline firms and the results showed that there was significant overhead cost reduction from post-mergers and acquisitions.

Kanahalli and Jayaram (2014) examined the effect of mergers and acquisitions on financial performance of a selected group of firms in India and the findings revealed that M&A resulted into synergy by combining strengths and weaknesses from different firms. Mahesh and Prasad (2012) indicate that M&A are considered as efficient means of expanding firm ownership and achieving large market share and competitiveness. Change of a firm's structure of ownership affects its control; this helps the firms to review its strategy and align its strategic goals. This form of change in control impacts on assets redeployment, operational structures and corporate strategies. Rai (2018) attributes M&A as an effective approach towards enhancing financial performance due to the advantages associated with this business decision. According to Mishra and Chandra (2010), the driving force behind mergers and acquisitions is basically profitability, revenue, improved growth and efficiency from technological improvements. Through mergers, firms gain access to talent and competencies and improved quality of decisions. Hence, mergers and acquisitions are instrumental in improving financial performance.

1.1.4 Petroleum Companies in Kenya

Petroleum companies in Kenya serve as leaders in the Kenya's indigenous oil marketing industry with expansive business activities across the world. According to Awino (2017), Kenya's Petroleum companies have a role in ensuring extraction and delivery of energy resources in a profitable, environmental, and socially-friendly manner. In a bid to meet these expectations, these firms seek to uphold high

performance standards and maintenance of a long-term position in the competitive environment where they operate.

Over the past three decades, the energy sector in Kenya has been an influx coupled with shifts in demand, supply, and competition from international players, infrastructure, and economics, which have all played a significant role in creating a 'perfect storm' for realignment as well as consolidation, which as a result has translated to increase in cases of merges and acquisitions. Currently, Kenya has 70 registered petroleum firms. Since the 1990s, activities of mergers and acquisitions have been experienced among various firms in the Kenyan oil industry.

According to Wambui (2016), some of the notable mergers and acquisitions in the Kenyan oil industry comprise of Shell-BP (acquisition), Total Kenya Ltd- Chevron (Caltex- acquisition on Nov 2009), and Kenol-Kobil (merger) among others. Currently, Oilibya Kenya Ltd, KenolKobil Kenya, Haas Petroleum, National Oil Corporation, Total Kenya, and Shell Kenya serve as some of the leading players in the Kenyan oil industry. As a result of mergers and acquisitions, the landscape of the Kenyan oil industry has been significantly impacted.

1.2 Research Problem

Mergers and acquisitions have recorded an impressive growth in the global markets. Some firms are motivated to take over other firms or merge with other firms and these has increased consumer demand and improved economic conditions among such firms (Mishra & Chandra, 2012). This has created an investment environment and thus making mergers and acquisitions as a strategic expansion alternative for top management executives (Ismail, Abdou & Annis, 2012). Through mergers and acquisitions, firms gain from increased market share, diversification of portfolios

among merging firms and increased customer base. This leads into an increase in the firm's financial performance.

There have been various merger and acquisitions in the petroleum sector involving several major players that include KenolKobil, Shell BP, Oilibya and Total Kenya. These mergers have had a significant impact on the oil industry in Kenya particularly in terms of market share, asset growth, customer base and overall firm performance. In view of these, Mailanyi (2014) indicates that mergers and acquisitions results into increased firm profitability and market share.

Mehrotra and Sahay (2018) found that mergers and acquisitions improved stakeholders' value and market share of Indian firms. Rashid and Naeem (2017) established that there was an insignificant link between mergers and acquisitions and corporate performance. Maditinos, Theriou and Demetriades (2009) researched the impact of mergers and acquisitions on firm performance among Greek banks and the findings revealed that there was a significant relationship between M&A and financial performance of Greek banks.

Akenga and Olang (2017) tested the link between M & A and financial performance of commercial banks in Kenya and the findings showed that M&A were positively linked to shareholders' value and assets of acquiring and merged banks. Kivindu (2013) researched the effect of M&A on financial performance of commercial banks in Kenya and the findings revealed that there was a positive and significant link between M&A and financial performance. Njoroge (2012) examined the link between M&A and profitability of financial institutions at the NSE and the findings found that M&A was significant related to ROA.

Although studies (Mehrotra & Sahay, 2018;Rashid & Naeem, 2017; Akenga & Olang, 2017; Maditinos, Theriou & Demetriades, 2009; Kivindu, 2013; Njoroge, 2012), have been done on M&A and financial performance, a limited focus has been given to the link between M&A and financial performance in the context of Petroleum companies in Kenya. This study will therefore seek to address this gap by finding an answer to the question: What is the effect of mergers and acquisitions on financial performance of Petroleum companies in Kenya?

1.3 Research Objective

The objective of this study is to determine the effect of mergers and acquisitions on financial performance of Petroleum companies in Kenya.

1.4 Value of the Study

Empirical findings will be useful to policy makers; Energy Regulation Commission (ERC), in setting policies that provide a supportive environment for petroleum firms to practice mergers and acquisitions in order to enhance financial performance. Petroleum companies will learn the advantages and disadvantages of mergers and acquisitions. Other firms will appreciate the effectiveness of M&A especially in gaining access to new markets, access to advanced technologies and innovation through diversity of ideas, experiences and professionalism. Finance practitioners will learn appropriate measures to use in measuring mergers and acquisitions and financial performance.

This study will make a great contribution to the extant literature. Scholars will get a deeper understanding of the theories guiding this study and how these theories relate to the study variables. Moreover, they will conceptualize the existing relationship between M&A and financial performances. Researchers who have an interest in this area might find the findings of this a useful basis for future research.

CHAPTER TWO
LITERATURE REVIEW

2.1 Introduction

The chapter is broadly classified into three main parts. The first section discusses theories supporting this study, the second section discusses the determinants of financial performance, empirical studies and a conceptual framework and the last section gives a summary of the literature review.

2.2 Theoretical Foundation

Various theories have been put forward in an attempt to explain the effect of mergers and acquisitions on financial performance. This study explains this relationship using the following identified theories namely Agency Theory, Free Cashflow Theory and Resource-Based Theory. To demonstrate relevance of these theories to the research objective, a conceptual and empirical discussion has been used as shown below:

2.2.1 Agency Theory

Agency theory was first mentioned in the literature of information economics in an effort to give a theoretical model on the link between a single party (the principal), who delegates the work to another party (the agent); agency theory got a growing attention in organisations and information system literature (Thompson, 1967; Eisenhardt, 1985). This theory attempts to explain organisational behaviours by laying emphasis on the association between the manager (executive director) who is the agent of the firm, and the stakeholders who in this case are the principals. Various scholars and researchers from different disciplines made various contributions, most notable fields include accounting (Baiman, 1990), law (Banfield, 1985), economics (Cooper, 1949; Ross, 1973), finance (Jensen & Meckling, 1976), sociology (Shapiro,

1987), strategy (Barnard, 1983) among others. The relevance of this theory to this study is that a company hires managers, who are supposed to act in the best interest of the shareholders (Jensen & Meckling, 1976). Sometimes this is not possible to achieve due to conflict of interests (agency problems). Thus, large and stable firms might allocate huge costs of agency such as monitoring and commitment costs to ensure that the managers act in the best interest of the shareholders and win their trust. Smaller firms cannot afford these costs as it might eat up on their operational costs and impact negatively on their performance. Smaller firms might threaten the managers of takeovers by larger firms in a bid to push them to work harder and achieve better performance.

2.2.2 Free Cashflow Theory

The theory of free Cashflow where he attributed free cash flow as the excess of cash that is required for funding projects with a positive net positive value upon discounting at the consequent cost of capital (Jensen, 2011). In a situation where a company generates substantial free cash flow, conflicts of interest may emerge between managers and shareholders on pay-out policies. According to Murphy (2013), the challenge comes about in the way managers get motivated to disgorge cash unlike investing it on investments whose cost of capital is low. Otherwise, the excess funds might be as a result of organisational inefficiencies. Managers with significant free cash flow, it is possible to increase dividends or even repurchase stock and as a result pay out the exiting cash, which would otherwise be directed to low-return projects or even face wastage. As a result, managers are left with the ability to control the use of free cash flows in the future, but they can make promises of making payment of future cash flows by making a 'permanent' dividend increase.

However, such promises are weak and ungrounded as it is possible to reduce dividends in the future. According to Murphy (2013), the free cash flow theory serves in predicting the mergers and takeovers that have the possibility of destroying as opposed to create value. This serves as an indication that there is evidence of conflicts of interest in takeovers between the managers and stakeholders. On the other hand, acquisitions serve as one way of managers spending cash as opposed to paying out to the shareholders. As such, the theory maintains that mangers with unusual borrowing power and access to free cash flows are likely to undertake low-benefit or value-destroying mergers (Brealey & Myers, 2009). If acquisitions are made without involving stock, they involve payment of resources to shareholders and this has the possibility of creating net benefits even in a situation where mergers lead to operating inefficiencies (Stewart, 2014). Firms with large cash flows, there is a high possibility of low-return mergers to be in existence. Where an industry is declining, mergers within such industries lead to value, whereas mergers outside such industries are more likely to have low or even adverse-return projects.

2.2.3 Resource-Based Theory

Resource Based View (RBV) is based on the concept that the organization is a constituent of a collection of capabilities. These capabilities enable the firm to make maximum use of its available resources. Firm performance differs due to uniqueness of resources and capabilities exhibited by firms in an industry (Hoopes, Madsen, Walker, 2003). Barney (2001) explains that resources are inputs into an organization's production process, these include; capital, employees skills, finances, equipment, goodwill and gifted managers. Resources are either intangible or tangible in nature. The set for resources available to the firm increases as the firm seeks to enhance its profitability. Individual resources might not necessarily lead the firm to a competitive

advantage but through synergy and integration of competitive resources (David & Cynthia, 1995). The RBV has been researched extensively in establishing the relationship between the organization's internal characteristics and performance. The basic idea is the organization is constituent of different resources put together to enhance competitiveness (Barney, 2001).

The manner in which the firm utilizes its resources is critical towards enhancing profitability. RBV is a theory that supports M&A and firm performance. M&A play an instrumental role in enhancing financial performance. Zott (2003) maintains that RBV puts more emphasis on performance implications of the organization's utilization of internal resources. M&A between firms bring about synergy, sharing of resources; technology, cost reduction, customer base and competition which lead to improved financial performance. Mergers and acquisition is seen as a strategic resource to the firm. Hoopes et al. (2003) further argue that the organization benefits from greater cost efficiency enabling the business to grow and develop.

2.3 Determinants of Financial Performance

There are various determinants of financial performance; this study will discuss the following determinants operating efficiency, financial leverage, firm size and liquidity management.

2.3.1 Operating Efficiency

Operating efficiency is a key determinant of financial performance. Operating efficiency can be seen through management competence which involves characteristics exhibited by an individual; this might be a skill, social role, motive or attributes shown by an individual or a body or knowledge that he uses. Moktar and Xiaofang (2014) indicate that competence involves work related capabilities, knowledge and skills that are needed to execute certain roles. The level of competence exhibited by the management of the firm affects the operating efficiency which in turn affects the firm performance; competent managers are efficient in managing firm operations and are rational in making investment decisions.

Unlike incompetent managers, competent managers save the firm huge costs from wastage and losses from poor investment decisions. In view of this, a study by Mahesh and Prasad (2012) found that management competence index was positively linked to financial performance. Murphy (2013) explains that through management competence the firm is able to generate ideas and engage in innovation thus gaining competitive advantage against its rivals. This contributes positively on enhancing the firm's financial performance.

2.3.2 Financial Leverage

Financial leverage is the extent to which firms increase their rates of profitability using borrowed capital. The firm gains from the use of financial leverage through tax deductions which impacts positively on firm performance. In view of this, Murphy (2013) found that financial leverage was negatively and significantly linked to firm profitability. These contradict the findings by Moktar and Xiaofang (2014), who found that financial leverage was positively and significantly linked to profitability.

However, use of financial leverage firm can help to mitigate agency costs. Leverage is employed by shareholders as a disciplinary tool for monitoring management actions; consequently, owners might increase leverage aiming at reducing agency costs. When a firm is financed using debt the management is more responsible and efficient to pay debt and minimize cost by all means (Sudarsanam, 2013).

2.3.3 Firm Size

Large firms can easily access credit from financial institutions since they have the capacity to pay. Large firms enjoy economies of scale and use average cost of production since they are more efficient in their operations, these results into improved financial performance. According to Sudarsanam (2013) large firms are competitive than smaller firms since they enjoy economies of scale and this enhances their profitability. Large firms easily access debt as compared to smaller firms since they enjoy a positive corporate reputation with the stakeholders. Due to instability by smaller firms, financial institutions are reluctant to give credit these firms. Smaller firms record high rates of growth which necessitates need for debt while larger firms are stable and established.

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2.3.4 Liquidity Management

Liquid firms are able to meet their financial obligations and thus, they can easily take advantage of opportunities by investing in profitable investments and this increases financial performance. Higher levels of liquidity enable the firm to deal with unexpected contingencies and to meet its financial obligations even in cases when firm earnings are minimal. Extant literature insists on the need for firms to enhance their current assets and decrease current liabilities since liquidity contributes positively towards financial performance.

Pastor and Veronesi (2013) noted that maintaining an average level of liquidity might be helpful in enhancing firm performance. In some cases, high levels of liquidity might do more harm than good to the firm especially when managers invests on investments that are not useful to the shareholders. This might bring about ambiguity on the effect of liquidity on financial performance of the firm.

2.4 Empirical Studies

2.4.1 Global Studies

Badreldin and Kalhoufer (2009) did an investigation involving the impact of M&A on bank performance of Egypt commercial banks. An explorative design was employed in a span of 5 years (2002-2007). Published sources of data were obtained from commercial banks annual reports. Bank performance was evaluated using ROE and M&A was assessed using liquidity, debt and profitability. The findings revealed that banks that adopted M&A recorded better performances after M&A. This study was limited to banks while the current study is focusing on petroleum companies.

Emy and Sahibzada (2016) investigated the effect of mergers and acquisitions on financial performance of firms in United States. The study employed causal research design involving a sample of 100 firms. The study spanned for duration between 2010-2015 and panel data was adopted. Paired T-test was employed and to find out pre-post comparisons. The results found that mergers and acquisitions resulted into improved stakeholders' value by increasing the demand for dividends as well as market share. This research was done in a global setting whose situations are different from local setting.

Yanan and Hamza (2016) tested the impact that M&A had on firms' financial performance at the U.S, a panel data analysis was used within a time span of six years pre and post-merger and acquisitions. The study sampled 100 companies and secondary data was used. Paired tests and descriptive statistics forms of analysis was used. The aim of this study was to observe the difference between pre and post M&A of the firm on ROE of acquiring firm to assess the effect that M&A had on the companies. The study discovered that M&A impacted on firm profitability, and increased the market share. It was further revealed that M&A enhanced stakeholders' value by increasing demand for dividends in securities markets. This study was carried out in a developed country while the current study is conducted in a developing country.

Altunbas and Ibanez (2004) did a study on the effect of M&A on commercial banks' performance. This study was commissioned by European Central Bank and the underlying objective of this study was to investigate the effect of financial consolidation that took place in Europe on banks' performance. The study findings found out that on average, return on capital improved as a result of bank mergers in the European Union. The findings demonstrated that for domestic deals, merging

different institutions was quite costly; this was based on firm size, cost of debt, earnings, strategies and deposits. As such, mergers and acquisitions on cross-border context, and variations of merging partners in their credit risk including loan strategies were factors that affected firm performance. The results concluded that there was a significant relationship between liquidity, management competencies, firm size and ROA after mergers and acquisitions. This study restricted itself explicitly to state banks while the current study is focuses on petroleum firms.

Momodou and Masazing (2017) researched the effect of mergers and acquisitions on financial performance of London Stock Exchange. An explanatory design was employed in a population of 40 firms listed under LSE (LSE) that consolidated in 2011. The study spanned between 2012 and 2016 (5-year duration) and post-merger and acquisitions financial ratios were utilized. Published data sources were used and analysis was done using descriptive statistics and regression analysis. The findings revealed existence of a positive correlation between M&A and ROE and Earnings per share. First, the study was done in a global setting whose situations are different from the local setting.

2.4.2 Local Studies

Njoroge (2012) did an assessment on the effect of mergers and acquisitions on financial performance of Kenya's financial institutions. The study used a descriptive design of all financial institutions that had either merged or acquired between 2000 to 2010. Data was derived from CBK annual report. Analysis for pre and post-mergers was done to find out if there was an improvement in financial performance especially in investment, profitability and liquidity. The findings disclosed that ROA and ROI

recorded an insignificant difference while ROE and debt equity ratio reported a significant difference after merging and acquisitions. The study restricted itself to financial institutions while the current study is focusing on petroleum companies.

Mboroto (2013) examined the effects of M&A on the financial performance of firm dealing with petroleum products in Kenya. A descriptive research design was employed in a population of 36 listed Petroleum firms. Secondary sources of data were used covering duration of 5 years 2008-2012. It was found that M&A had an insignificant effect on ROA before M&A then later there was a significant improvement in ROA. This study was conducted 5 years ago some petroleum companies have merged thus this findings is not a true reflection of the current situation.

Kivindu (2013) evaluated the effect of M&A in commercial banks profitability in Kenya. The researcher relied on a descriptive design and a population of 24 commercial banks that were acquired or had merged in Kenya from 2010 to 2013. It was revealed that financial institutions with weak capital base consolidate with a purpose of creating synergies in order to benefit from economies of scale as this has the ability of improving their profitability as opposed to going public through listing in the Nairobi Stock Exchange, which is primarily an expensive venture. This research was limited to commercial banks while this study is based on petroleum companies.

Mwanza (2016) studied the effect that mergers and acquisitions had on financial performance of insurance firms in Kenya. A descriptive design was employed in a sample involving mergers and acquisitions that took place between 2010 and 2013. Financial statements of merged and acquired insurance firms were used and analysis

was done using descriptive and inferential statistics. It was discovered that during post-merger, ROA and return on capital employed increased significantly, implying that mergers and acquisitions enhanced ROA of insurance firms. The study was limited to insurance firms while this study is investigating petroleum companies.

Akenga and Olang (2017) assessed the effect that mergers and acquisitions have on financial performance of commercial banks. A descriptive study was employed with the help of an event study model to examine the link between variables. A population of 42 commercial banks was used and analysis was done using regression and descriptive statistics. It was revealed that mergers and acquisition events recorded significant increase in financial performance. The results demonstrated that mergers and acquisitions were positively linked to ROA. The study was limited to commercial banks while the current study is focusing on petroleum companies.

2.5 Conceptual Framework

The conceptual framework demonstrates the link between M&A (independent variables) and financial performance (dependent variable). It is hypothesized the M&A will affect financial performance of petroleum companies in Kenya.
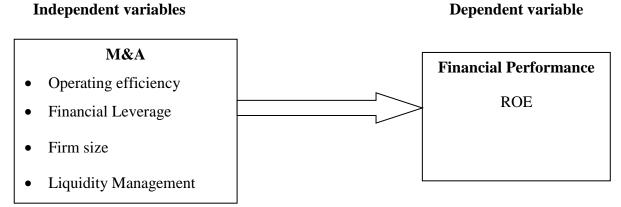
Independent variables   **Dependent variable**

M&A
• Operating efficiency
• Financial Leverage
• Firm size
• Liquidity Management

Financial Performance

ROE

Figure 2.1: Conceptual Framework

2.6 Summary of the Literature Review

In the reviewed literature, empirical studies support the theories that guide this study. These theories are Agency Theory, Cashflow Theory and Resource-Based Theory. A variety of factors impact on financial performance of firms, however, from the empirical findings, the most common factors include solvency margin, financial leverage, firm size and liquidity management. Empirical study findings show a mixer of reactions on the link between M&A and financial performance pre and post-merger and acquisitions Mwanza (2016) and Kivindu (2013) have demonstrated a positive link between M&A and financial performance during pre and post-merger (capital adequacy bank size and leverage), Mboroto (2013) and Njoroge (2012) found an insignificant and significant relationships between M&A and financial performance during pre and post-merger. Also, many studies that have looked into the effect of M&A on financial performance have largely focused on commercial banks and insurance firms and paid a limited focus to petroleum companies in Kenya.

CHAPTER THREE
RESEARCH METHODOLOGY

3.1 Introduction

This chapter presents the methodology that was applied by the researcher to accomplish the research objective. Research methodology can be described as an approach used to collect and analyse data with the view of addressing the research question. The sections discussed in this chapter are research design, population, data collection and analysis.

3.2 Research Design

This study employed a descriptive research design. According to Cooper and Schindler (2008) a descriptive design can be described as a detailed description of a certain event, situation or an interaction involving objects or individuals. The decision to choose a descriptive research design is because it is useful in establishing hypothetical relationships among variables. In this study, it this design was used to establish the relationship between mergers and acquisitions and financial performance of Petroleum companies in Kenya.

3.3 Study Population

The study population included petroleum companies that engaged in mergers and acquisitions whether listed or not listed in the Nairobi Securities Exchange. Some of the Petroleum companies took part in mergers and acquisitions with the aim of enhancing financial performance. This study focused on the four petroleum companies that were involved in mergers and acquisitions whether there were listed or not, but fall in the period between 2000-2017, as presented in Appendix I of the study.

Petroleum companies that were involved in M&A in the study period are as follows: Kenol merged with Kobil that led to the formation of Kenol Kobil Ltd. In year 2000, Kenol acquired Galana Oil including Petrol and Oil Vendor. In year, 2006 BP Kenya's majority shareholding was acquired by Kenya Shell. Then in 2007, Exxon Mobil's majority shareholding was acquired by Oil Libya and lastly, in 2008 Chevron Kenya assets were all acquired by total Kenya.

3.4 Data Collection

The study used secondary sources of data of financial statements of companies that merged pre and post. The study did a comparison of intrinsic value prior and after merger. Secondary data was obtained from NSE and CMA annual reports including company repository. Data from financial statements included total assets, net profit, total assets, net profits, current assets, current liabilities and cumulative liabilities.

3.5 Data Analysis

Data analysis was separated into pre-merger/acquisition period and post/acquisition period. This way, the researcher was able to compare financial performance before merger/acquisition and after. This comparison covered 6 years; 3 years pre M&A and 3 years post M&A, and the year of merger was considered to be zero. Data was coded into two, a new variable coded as 0 and1, 0 showed a variable before a merger and 1 after a merger. The objective was to find out if these variables changed after M&A, and this informed the use of statistical tests: paired data before and after M&A. Analysis was further defined by the newly coded variables to depict M&A before and after. Data was then processed to establish the summary of the statistics of the two time period; this was repeated for all the variables.

T-test was utilized to establish if the average ROE before merger was significantly different as compared to average ROE after M&A.

3.5.1 Diagnostic Tests

3.5.1.1 Normality Test

Normality tests are meant to test normal distribution which is bell shaped (i.e. Mean of zero). Shapiro-Wilk (S-W) tests was utilized in this study to test the assumption that sample data was obtained from a normally-distributed population. A null hypothesis test was carried to test if the data was derived from a population that is normally-distributed.

3.5.1.2 Heteroskedasticity Tests

Heteroskedasticity takes place when standard deviation of variables is not consistent after a close monitoring for some time. It is an error of variation that takes place in an independent variable in a given sample. Variations may be utilized to calculate a margin of error among data sets for example expected and actual results.

This is because it gives a measure of deviation of data points from mean values. Breusch-Pagan (BP) was used to test heteroskedasticity. The assumption was that heteroskedasticity is a linear function of independent variables in a model. If the assumed homoscedasticity was true, then the variance in the error term is constant. Hence, this assumption was regarded as null hypothesis.

3.5.1.3 Multicollinearity Test

Multicollinearity (also collinearity) takes place when a predictor variable a multiple regression equation is linearly predictable from the rest with a high level of accuracy. Multicollinearity was evaluated by testing Variance Inflation Factor (VIF) in order to establish whether there was multicollinearity. VIF was utilized to assess the effect of

collinearity in between variables in a regression model. VIF is 1/tolerance, it is greater than or equal to 1. There is no formal VIF value to establish whether there was presence of multicollinearity. VIF values that exceed 10 are considered to depict multicollinearity but in very weak models, values that exceed 2.5 could be a cause for alarm.

3.5.2 Tests of Significance

The study conducted t-test to determine the observations before-and-after on study variables. Paired t-test was carried out to test if there is any significance difference between study variables before and after M&A.

CHAPTER FOUR

DATA ANALYSIS, RESULTS AND DISCUSSIONS

4.1 Introduction

Descriptive statistics helps the researcher to visualize data and thus data can be presented in a manner that is more meaningful for easy interpretation. Descriptive analysis helps the researcher to generalize the population. The chapter gives a discussion of the diagnostic tests involving statistical assumptions of regression analysis and descriptive statistics of M&A and financial performance of Kenyan oil companies.

4.2 Tests of Normality

Normality tests were carried to establish whether data set was well-modeled in a normal distribution and to compute the possibility for a random variable that underlie the data set to be distributed normally. The results are shown in Table 4.1.

Table 4.1: Normality Tests

	Tests of Normality					
	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Statistic	Df	Sig.	Statistic	df	Sig.
ROE	.206	12	.170	.898	12	.548
Debt-equity ratio	.183	12	.200[*]	.903	12	.571
Financial leverage	.247	12	.056	.831	12	.621
Firm size	.395	12	.093	.669	12	.570
Operating efficiency	.272	12	.054	.625	12	.065
ROE after	.397	12	.701	.639	12	.207
Debit-equity ratio after	.411	12	.628	.634	12	.811

Financial leverage after	.319	12	.915	.769	12	.204
Firm size after	.320	12	.162	.724	12	.101
Operating efficiency after	.305	12	.403	.671	12	.551

The results in Table 4.1 show that all the study variables are normally distributed since their level of significance (p-values) exceeds 0.05 i.e. (0.548, 0.571, 0.621, 0.570, 0.065, 0.207, 0.811, 0.204, 0.101 & 0.551, respectively).

4.2 Descriptive Statistics

Descriptive statistics is the use of simple summaries of a sample including observations which have been made. It will consist of the following measures: mean, standard deviation, and skewness, maximum and minimum as shown in Table 4.2 below:

Table 4.2: Pre-M&A Descriptive Statistics

Units	Mean	Standard Deviation	Skewness	Maximum	Minimum
Debt-to-equity	1.456	0.401	1.132	2.45	1.082
Firm size	7.411	0.404	0.984	8.113	7.064
Liquidity Management	1.068	0.305	-1.025	1.268	0.500
Operating Efficiency	0.569	0.804	2.104	2.954	0.047
ROE	0.147	0.015	0.013	0.167	0.123

In Table 4.2, the findings showed that before M&A, petroleum companies attained an average ROE of 0.147, standard deviation of 0.015, a minimum value of 0.123 and a maximum value of 0.0167. ROE recorded the lowest standard deviation (0.015), which implied that ROE of merging and acquired petroleum companies were less spread out before M&A. The average value of debt-to-equity before M&A was 1.456, standard deviation was 0.401, minimum value was 1.082, maximum value was 2.45 and skewness of 1.132. Average value of firm size was 7.411, standard deviation of 0.404, minimum value of 7.064 and maximum value 8.113. The mean value of

liquidity was 1.068, standard deviation 0.305, minimum value of 1.268 and a maximum value of 0.500. Operating efficiency recorded a mean value of 0.569, standard deviation of 0.804, minimum value of 0.047 and maximum value of 2.954.

Table 4.3: Post-M&A Descriptive Statistics

Units	Mean	Standard Deviation	Skewness	Maximum	Minimum
Debt to Equity	1.733	0.488	-0.874	2.182	0.841
Firm size	7.709	0.429	-0.031	8.141	7.228
Liquidity Management	2.897	1.336	0.423	5.728	1.306
Operating Efficiency	0.71	0.736	2.017	2.883	0.04
ROE	0.114	0.101	2.009	0.406	0.036

After M&A, ROE recorded a significant increase whereby the highest value was recorded at 0.406 and the lowest value at 0.036. These implied that petroleum companies recorded an increase in ROE after M&A. The value of debt-to-equity increased to 1.733 from 1.456, these imply that through M&A petroleum companies held more net assets as compared to debt. After M & A, the mean value of firm size increased to 7.709 from 7.411, which was an indication that firm size increased since petroleum companies consolidate their total assets after M&A. The level of liquidity increased to 2.897, which implied that most petroleum companies were able to meet their obligations financially after M&A. Operational efficiency increased from 0.569 to 0.71, and this was largely attributable to improved management competencies of merged and acquired petroleum companies.

4.3 Paired Sample T-test

A paired T-test is applied to compare two means of population where there are two samples; the observation from one sample is compared to observations in another

sample. This test is carried out to determine the observations before-and-after on similar study variables. Paired t-test was carried out to test whether there was any significance difference among study variables before and after M&A.

Table 4.3: Paired Samples Test

		Paired Differences						
					95% Confidence Interval of the Difference			Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	Lower	Upper	t	
Pair 1	ROE before and- ROE after	-.034	.104	.030	-.099	.032	-1.128	.283
Pair 2	Liquidity before and liquidity after	1.829	1.147	.331	1.100	2.558	-5.525	.000
Pair 3	Debt to equity before and debt to equity after	.277	.586	.169	-.096	.649	1.635	.130
Pair 4	Firm size before and firm size after	.298	.366	.106	.065	.531	2.820	.017
Pair 5	Operating efficiency before and operating efficiency after	.141	.532	.154	-.197	.479	.919	.378

The results depict that only two variables were statistically significant in the two periods (Pre-M&A and post M&A), these include liquidity and firm size whose p-values were as follows: 0.000 and 0.017, respectively. Similarly, these two attained the highest mean (1.829 and 0.298, respectively). These imply that M&A had an effect of financial performance of petroleum companies. The findings further revealed that ROE, debt to equity ratio and operating efficiency were insignificant since their p-values exceeded 5%, (0.283, 0.130 & 0.378, respectively).

Pair 1: There was no significant average difference between ROE before and ROE after as revealed by p-value, 0.283 > 0.05. The mean difference of -0.034 and the standard deviation of 0.104 between ROE before and ROE after are significantly low. Pair 2: Significant average difference was established between liquidity before and

after, as revealed by p-value $0.017 < 0.05$. On average, liquidity value after was 1.83 and a standard deviation of 1.147.

Pair 3: There lacked significant average difference between debt to equity before and after, as revealed by p-value $0.283 > 0.05$. The mean difference of 0.277 and the standard deviation of 0.586 between debt to equity after and Debt to equity before are significantly low

Pair 4: There was a significant average difference between firm size before and after, as revealed by p-value $0.000 < 0.05$. On average, the mean difference was 0.298 and a standard deviation of 0.366 which was significantly low.

Pair 5: There was no significant average difference between operating efficiency after and operating efficiency as shown by the p-value $0.378 > 0.05$. The mean difference of 0.141 and the standard deviation of 0.532 between operating efficiency before and after was significantly low.

4.4 Discussion of Findings

Prior M&A, petroleum companies had an ROE of 0.147, after M&A ROE rose to 0.406 which implied that M&A increased ROE which signaled that petroleum companies were able to generate profitability from investments that were made by stakeholders. These findings support the observations of Njoroge (2012) who found that ROE of commercial banks improved after M&A. There was an increase in Debt-to-equity ratio of petroleum companies after M&A; from 1.456 (before) to 1.733 (after).

These imply that M&A enabled petroleum companies to build their capacity to finance their assets in relation shareholders' equity that was utilized to meet firm obligations like paying creditors. These findings conform to the observations of

Momodou and Masazing (2017) who unraveled that debt-to-equity rose upon M&A. Size of firm also increased when firms engaged in M&A; from a mean value of 7.411 (prior) to 7.709 (after); as a result of asset combination between petroleum firms. These outcomes are consistent to the findings by Altunbas and Ibanez (2004) who found an increase in bank size when M&A between firms took place.

Prior to M&A, the average liquidity level of petroleum companies was 1.068 after M&A; these liquidity levels rose significantly to a mean of 2.897. This was largely attributed to a combination of current assets and liabilities. As such, petroleum companies were able to meet their financial duties. These findings are aligned to the recommendations of Yanan and Hamza (2016) who concluded that financial institutions that practiced M&A met their financial obligations timely.

Moreover, the findings discovered that operational efficiency increased from a mean of 0.569 (before) to 0.71 (after), due to use of advanced technology and management competencies following M&A. This resulted into improved efficiency and reduction of cost. These outcomes agree with the observations of Mwanza (2016) who found out that operational efficiency of commercial banks increased after M&A, due to adoption of modern technologies and increased management competence.

The findings disclosed that size of firm and liquidity was significant as revealed by their p-values (0.000 & 0.017, respectively) which were less than 5%. These observations are Altunbas and Ibanez (2004) who found that bank size explained significant difference of M&A in period before and after.

Debt-to-equity ratio and operational efficiency were insignificant since their p-values exceeded 5% (0.130 & 0.378, respectively), these findings object the views of Momodou and Masazing (2017) who discovered that operational efficiency and leverage showed significant difference pre and post M&A of commercial banks.

The findings established the existence of an insignificant average difference in ROE of petroleum companies prior and after M&A. Its p-value was 0.283, and a significantly low mean difference of -0.034. These results are in line with the findings of Yanan and Hamza (2016), who established a significant difference between M&A and ROE of firms.

It was further discovered that there was significance average difference of liquidity (current ratio) before and after merger and acquisitions. Consistent to these findings is a study by Mboroto (2013) who established that there existed a significant difference in liquidity ratio before and after merger and acquisitions. There lacked a significant average difference in debt-to-equity, before and after as evidenced by p-value of 0.283>0.05.

These findings contradict to the views of Kivindu (2013), who found that debt-to-equity ratio recorded a significant difference. It was further established that mean and standard deviation differences in debt-to-equity was significantly low. Similar, the results revealed that there was a significant difference in firm size, prior and after M&A, with a p-value of 0.000<0.05.

Additionally, there was mean difference of (0.298), and standard deviation of (0.366), was significantly low. In line with this, is a study by Momodou and Masazing (2017), who established that firm size recorded a significant difference prior and after M&A of listed firms at LSE. Further, the findings revealed that there was no significant difference in operational efficiency of petroleum companies prior and after M&A, this is evident from its p-value of 0.378>0.05. Difference in mean (0.141) and standard deviation (0.532) was significantly low. These results are consistent to Mwanza (2016), who found that operational efficiency was insignificantly related to ROA.

CHAPTER FIVE

SUMMARY OF FINDINGS, CONCLUSIONS AND

RECOMMENDATIONS

5.1 Introduction

This chapter presents results of diagnostic tests, descriptive statics and interferential statistic and their interpretations. The findings have been discussed in line with the purpose of this study which was determining the effect of M&A on financial performance of petroleum companies in Kenya. The sections discussed in this chapter include conclusion, recommendations, limitations and areas for further research.

5.2 Summary of Findings

The results discovered that before M&A, petroleum companies attained ROE OF 0.147 and after M&A, ROE increased to 0.406; this was an indication that most of the petroleum companies recorded an increase in ROE. These findings are consistent to Njoroge (2012) who found that commercial banks's ROE increased after M&A. The findings discovered that debt-to-equity ratio increased after M&A took place; petroleum companies maintained high levels of debt-to-equity ratio. Average mean of debt to equity ratio before M&A was 1.456, after M&A it increased with a significant margin to 1.733. These findings are in agreement with the views of Momodou and Masazing (2017) who found that debt-to-equity ratio increased after M&A.

Firm size also increased after M&A, from a mean value of 7.411(before), to 7.709, due to a combination of assets between firms that resulted into an increase in assets. These results are consistent to Altunbas and Ibanez (2004) who found an increase in firm size of commercial banks after M&A.

Prior M&A, the mean level of liquidity by petroleum companies was 1.068, after M&A, this level of liquidity increased significantly upon M&A to a mean of 2.897. This was attributable to a combination of current assets and liabilities where current assets exceeded current liabilities. The findings support the views of Yanan and Hamza (2016) who found that liquidity levels of listed financial institutions increased after M&A. Operational efficiency increased from 0.569 (mean value before M&A) to 0.71 (mean value after M&A), this was attributed to synergy through improved management competencies from sharing ideas, diversity and experience after mergers and acquisitions of petroleum companies. This also led to significant cost reduction.

The results of paired sample tests showed that liquidity and firm size were statistically significant in the study period since their p-values were less than 5% (0.000 and 0.017, respectively). However, ROE, debt-to-equity and operational efficiency were insignificant during the study period since their p-values exceeded 5% (0.283, 0.130 & 0.378, respectively). These imply that M&A affected financial performance of petroleum companies as evident by predictor values (size of firm and liquidity).

5.3 Conclusion

The study concludes that M&A of petroleum companies resulted into an increase in debt-to-equity ratio, size of firm, liquidity and operational efficiency. This increase was as a result of consolidation of equity and debt; whereby most of the merging petroleum companies held more equity than debt. Moreover, firm size increased as a result of a combination of total assets of petroleum companies that were involved in M&A.

ROE and operational efficiency recorded significantly low mean differences and standard deviation. This is an indication that the effect of operational efficiency and ROE was minimal after M&A, which might imply that M&A affected ROE and operational efficiency significantly in the long term. Liquidity and size of the firm recorded highest values of average mean differences after M&A which imply that the effect of these two variables was realized after petroleum companies took part in merger and acquisitions. Although liquidity recorded a significant difference after M&A, it had the highest standard deviation which implied that M&A between petroleum companies was between two different firms particularly, in terms of size and profitability.

Through M&A, there is exchange of ideas, knowledge and innovation in management of firms. This contributed to improved management competencies resulting into cost reduction and efficiency. The study further concluded that liquidity and size of firm were statistically significant; implying that M&A had an effect on financial performance of petroleum companies in Kenya.

5.4 Recommendations

The study recommends Petroleum companies should continuously practice M&A to boost financial performance of either stagnated or poor performing firms. Firms will benefit from synergy, technical know-how and ideas, management competencies and overall firm performance.

The executive management of petroleum companies in Kenya needs to embrace corporate governance practices, encourage and support investments in modern technologies and increase in paid up capital while disregarding statutory requirements to ascertain the firm's going concern after mergers and acquisitions.

The top management should continue undertaking mergers and acquisitions with the view improving operations and minimizing risks of business failure while enhancing the level of firm's competitiveness and financial stability. The management should devise sound strategies to maintain a proper balance between assets and liabilities management to ensure that the firms make the right investment decisions while enhancing the quality of assets. Top management should consider the degree of marketability and transferability of invested assets and thus ensuring that assets can easily be liquidated.

Mergers and acquisitions undergo through regulations particularly when the deal is likely to lead to a monopoly or a reduction in competition, in an industry. It is important that top management should do due diligence, structure their transactions, analyse industry regulations and guidelines. This will help to promote sound competition and fair practices among petroleum companies in Kenya.

5.5 Limitations of the Study

The researcher took all the necessary precautions to deal with the limitations below. However, in research it is impossible to completely deal with these limitations. The study used secondary sources of data; which comprised of general purpose reports that are historical and easily to manipulate. This form of data might be unreliable and inaccurate and might impact negatively on reliability and quality of findings.

The study adopted a descriptive research design accompanied by research questions. The major shortcoming for this research is that although it was able to establish the direction and the nature of existing relationships between variables, it was not able to establish the 'cause and effect' relationship between M&A and financial performance of petroleum companies.

This study used a descriptive form of research design because it had clearly a specified research question. The weakness of this design is that, it cannot be utilized to establish the causality between variables. Even though descriptive design established the nature of relationship among variables, it failed to establish the causal effects between them.

This study spans for a period of five years; it is advisable for future researchers to do a longitudinal study that covers for a period that exceeds 10 years. This way, the researcher will be able to establish the nature of existing relationships between the variables more accurately.

5.6 Suggestions for Further Research

There is need to conduct further research in different sectors involved in mergers and acquisitions to gain further insights. This is because depending on the type of industry, there is a huge possibility that brings about differences in financial performance of firms prior to and after the merger and acquisition. Extensive researches have been conducted on how financial performance of firms in petroleum companies, banking sector and insurance companies are affected by mergers and acquisition, thus making it necessary to explore other sectors such as manufacturing, IT and agriculture in order to establish whether mergers and acquisitions have a major effect on financial performance. Moreover, it is necessary to establish the manner in which mergers and acquisitions impact on shareholder's value of oil companies.

Further studies in other sectors involved in mergers and acquisitions should be conducted based on a firm that is similar in size and areas of interventions so as to compare the findings. This makes it necessary to establish whether there is any other possible factors that might affect financial performance of Kenya's oil companies. This type of research should consider other factors so as to find out specific factors that affect mergers and acquisitions of petroleum companies in Kenya.

A duplicate of this study needs to be conducted in other countries particularly in the Sub-Saharan region. This will enable the researcher to identify specific factors that affect petroleum firms and the nature of relationships between variables. This will give a detailed review regarding the nature of the relationship established and the universality and relevance of mergers and acquisitions and its effect on financial performance of petroleum companies.

The environment that firms do business is characterized by uncertainties due to macro-economic factors such as technological changes, government regulations, evolving needs of customers and competition. It would be worthwhile for future researchers to make considering of doing a similar researcher after a period of like 20 years to establish if the findings got in this study can hold.

A replica of this research should be carried out in the same sector using a different methodological approach for example use of a longitudinal design and panel regression analysis. This will broaden the researchers' understanding on the effect that M&A have on financial performance. Through a comparison of findings, the researcher will identify variables that significantly impact on financial performance and those that lack any effect. This will enable the researchers to draw a conclusion on factors that affect financial performance when firms engage in mergers and acquisitions.

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APPENDIX I: LIST OF MERGED AND ACQUIRED PETROLEUM COMPANIES IN KENYA (2000-2017)

1. Kenya Oil Company Limited (Kenol) which merged with Kobil to form Kenol/Kobil Ltd. In 2000, Kenol acquired Galana Oil, petrol and oil vendor

2. 2006 Kenya Shell acquired the Shareholding of BP in Kenya

3. Oil Libya acquired Exxon Mobil shareholding in Kenya in 2007.

4. Total Kenya acquired all the assets of Chevron in Kenya (Kenya Oil Company Limited, 2008).

APPENDIX II: SECONDARY DATA

Period	ROE	Debt-to equity Ratio	Liquidity	Natural log of assets	Operating Efficiency
1	0.1652	1.3058	1.6718	7.064	0.20357389
2	0.1674	1.5154	1.2868	7.201	0.88776466
3	0.165	1.4817	1.2581	7.152	0.91058159
4	0.1661	1.3133	1.6814	7.215	0.23273849
5	0.1463	3.2265	1.1528	7.261	0.24349453
6	0.1451	3.2003	1.1434	7.182	0.20204339
7	0.1439	3.1742	1.1341	7.199	0.16054973
8	0.1454	3.0287	1.0821	7.213	0.07004616
9	0.1229	3.6851	1.5763	7.218	0.52427002
10	0.1307	5.7276	2.45	8.001	2.95447993
11	0.1408	4.2205	1.8054	8.112	0.38765512
12	0.1297	2.8875	1.2351	8.113	0.04716491
Period after	ROE after	Debt to equity ratio after	Liquidity	Natural log of assets	Operating efficiency after
1	0.0776	0.5002	0.8409	7.228	0.56015239
2	0.0882	0.5685	0.9557	7.239	0.05685122
3	0.0973	0.6276	1.055	7.351	0.04006673
4	0.0967	1.2065	2.0281	7.249	0.53869846
5	0.047	1.2467	1.9249	7.393	0.53078616
6	0.4055	1.1947	1.9621	7.347	0.56127825
7	0.0363	1.2375	1.9512	8.104	0.59180162
8	0.0954	1.2366	1.9512	8.102	0.76143148
9	0.2007	1.2302	1.735	8.115	0.32424342
10	0.081	1.2578	2.1804	8.119	2.883265
11	0.0707	1.2685	2.0307	8.121	0.99506948
12	0.066	1.2404	2.1818	8.141	0.67520922

APPENDIX III: LINE PLOTS

Various variables pre merger and post merger