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ASHESI UNIVERSITY COLLEGE

IMPACT OF MERGERS AND ACQUISITIONS ON EMPLOYMENT IN AFRICA

By

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Declaration

I hereby declare that this undergraduate thesis is the result of my own original work and that no part of it has been presented for another degree in this university or elsewhere.

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I hereby declare that preparation and presentation of this undergraduate thesis were supervised in accordance with the guidelines on supervision of undergraduate thesis laid down by Ashesi University College.

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Abstract

In Africa, several empirical studies on mergers and acquisitions (M&A) have mainly focused on why they occur and not on their likely impact on macroeconomic indicators. Mergers and Acquisitions are major corporate actions but these raise imperative concerns about labour employment. The objective of this study therefore is to empirically test the impact of M&A on employment in Africa using annual time series and cross-sectional data of 14 African countries from 1990 to 2010. The study developed an empirical model in which M&A, interest rate, GDP growth and inflation are the explanatory variables, with employment as the dependent variable. Before the model is estimated, the time series features of the data are diagnosed. A panel dataset is created and the model is re-estimated using the Feasible Generalized Least Squares (FGLS) estimator which corrects for heteroskedasticity and autocorrelation. The estimated results suggest that M&A have a statistically significant and negative relationship with employment in Africa. The implication of the study's findings necessitates the need for employers to pay attention to the loss of institutional knowledge in using M&A as a tool for downsizing employment and the need for employees to learn new skills to increase their retention rates during an M&A deal. One major implication for policy makers in Africa such as trade unions and labour institutions is the need to negotiate for mutually beneficial post-merger integrating strategies geared towards the protection of workers interest.

Keywords: mergers and acquisitions (M&A), employment, efficiency theory, Feasible Generalized Least Squares (FGLS)

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CHAPTER 1: INTRODUCTION

1.1 Background

Mergers and Acquisitions (hereafter referred to as M&A or M&As for singular and plural forms respectively) refer to the ‘synthesis’ of two or more companies to achieve a certain strategic goal (Nouwen, 2011). M&As could occur as horizontal, vertical or conglomerate. A horizontal M&A is the combination of two or more companies in the same industry while a vertical M&A occurs when a company combines with its suppliers or distributors (Nouwen, 2011). A conglomerate M&A occurs when companies from unrelated industries combine their services to become a single company (Nouwen, 2011).

Recent trends in global M&A deals have been buoyant. Erel et al. (2012) document that the volume of worldwide cross border M&As grew from 23% in 1998 to 45% in 2007. At the same time, a rise in M&A was witnessed in 2007 and 2008 globally in both developing and developed countries (Erel et al., 2012). In the work of Thomson Reuters, as cited in Klein and Thacher (2017), the total value of M&A announced in 2016 was US\$3.7 trillion, totaling a 16% reduction in 2015, and making 2016 the third strongest annual period for global M&A since record deals began in 1980. In 2016, M&A deals announced globally was 46,055. The main drivers of the increased M&A deals in 2016 included continued low interest rates, large corporate cash reserves and limited prospects for organic growth (Klein & Thacher, 2017).

Africa is no exception when it comes to increased ‘appetite’ for M&A deals. M&A activities have become important outlets for investment in Africa for both local

and global market players. The increased M&A deals have enabled African companies to consolidate their positions in the African markets, contributing to better market access and competitiveness (African Development Bank Group, 2012). Recent trends in African M&A deals slowed slightly after the global financial crisis. M&A deals on the continent amounted to USD27 billion in 2011 as against USD44 billion in 2010. M&A deals in South Africa accounted for 57% of the total M&A activity in Africa, suggesting that South Africa is a significant driver of Africa's M&A activity (African Development Bank Group, 2012). As reported by the African Development Bank Group (2012), the main driver of M&A deals in Africa is the high economic growth experienced by the continent in recent years and this is expected to grow in the coming years. In addition to natural resources that the continent is endowed with, the continent also offers investors a 1 billion consumer market, making the continent an attractive location for M&A deals (African Development Bank Group, 2012).

However, most empirical studies of M&A have focused on why they occur and not on their likely impact on employment. According to Coase (1937), Nelson (1959) and Harford (2005) as cited in Doytch et al. (2011), M&As are seen as efficient reallocations of assets in response to market forces, including new regulation, new technology, financial liquidity, new competition, and industry growth or maturity, under the condition of sufficient capital liquidity. For instance, M&A is asserted to lead to economies of scale and other cost synergies, increased market shares, and access to new technologies (Doytch et al., 2011). However, there are concerns about M&A affecting key macro indicators like employment (Doytch et al., 2011).

While M&A is predicted to grow in Africa, the continent is also facing a growing unemployment challenge (International Labour Organization, 2016). According to Kubo and Saito (2009), it is widely considered among employees that M&As usually result in job cuts and wage reduction. The increasing unemployment challenges in Africa predicted by the International Labour Organization (2016), and the increasing growth of M&As in Africa predicted by the African Development Bank Group (2012) suggests a relationship between employment and M&A activity. Thus, the purpose of this study is to present some empirical findings about the relationship between employment and M&A activity in Africa. The issue addressed in this study is whether the active M&As in Africa have a positive or negative effect on employment. This study is not only the concern of individual firms, but also the center of African interests in the context of African industrial policies.

1.2 Research Problem

Generally, the practice of M&A in the finance industry has engendered much research in the finance literature in recent years. The majority of these studies has, however, been conducted in Europe (e.g., Bandick & Karpaty, 2009), Asia (e.g., Kubo & Saito, 2009) and the Americas (e.g., Gugler & Yurtoglu, 2003). This trend may be due to record breaking deals experienced in Europe, Asia and the Americas. In Africa, this study is also relevant because M&As have become a strategic mode of entry into Africa by foreign investors (Agbloyor et al., 2012). According to UNCTAD (2009), cross border M&A in Africa contributed significantly to Africa's Foreign Direct Investment (FDI) inflows amounting to \$88 billion in 2008. This shows how the increase in M&A in Africa has contributed significantly to FDI inflows.

On the contrary, though M&A is contributing to the increase in Africa's FDI inflows, its impact on employment has been ignored. In Africa, there is little research on the impact of M&A on employment; the notable exception being Nene (2012). Nene (2012) examined the impact of M&A on unemployment in South Africa by considering 42 companies and used financial statement analysis as part of his methodology. The scope of Nene's (2012) study considering only 42 companies, and the use of financial statement analysis may not be reliable. Therefore, this study seeks to fill the gap in the literature by examining how aggregate M&A activity affects employment rate in Africa. In the African context, this issue seems to have been ignored in the literature or, at least, it remains under-researched. This research also expands on Nene's (2012) study which analyzed a single country. By focusing on 14 African countries with M&A values taken from each country between 1990 to 2010, it is hoped that this study would shed more light on the extent to which M&A activity affects the rate of employment in Africa by providing empirical evidence and adopting a more robust methodology.

1.3 Research Objective

This study aims to examine the impact of M&A on employment in Africa.

1.4 Research Hypothesis

A number of theories explain why corporations undertake M&As (Wadhwa & Syamala, 2015). According to Wadhwa and Syamala (2015), the most prominent and widely used theory is the efficiency and value decreasing theories. Thus, the efficiency and value decreasing theories are the theoretical framework on which this study is underpinned.

With regard to the efficiency theory, M&As are planned and executed to achieve synergies in the form of cost reduction or increase in sales. Cost reduction can take the form of laying off workers. For instance, according to Cappelli (2005), cost drives investment as investors like the idea that cost can be reduced through employment reduction in order to save money when M&As are announced. This may suggest that corporations may engage in M&A activity in an attempt to reduce employment size. As per the efficiency theory, M&As create value for the combined companies and this leads to efficiency requiring fewer workers to accomplish the same task (Wadhwa & Syamala, 2015).

Contrary to the efficiency theory, the value decreasing theory suggests that the impact of M&A on the acquiring firm is rather detrimental as argued by Dickerson et al. (2009) and cited in Weitzel and McCarthy (2009). The value decreasing theory further posits that M&As fail to create value with 60% and 80% of M&As classified as failures (Weitzel & McCarthy, 2009). The implication of the value decreasing theory is that M&As rather fail to create synergies and hence, efficiency gains in the form of cost and employment reduction may not be realized. On the other hand, because the value decreasing theory posits that most M&As fail to create value, it follows that the value of the combined companies is negatively affected. As a result, managers may want to reduce cost and this may affect the employment size.

Given the contradiction between the theoretical underpinnings regarding why M&As occur and its impact on employment, it was necessary to test a hypothesis on the relationship between M&A and employment in Africa. Following from the above discussion, the study seeks to test the hypothesis:

H_0 : There is no relationship between M&A and employment in Africa.

H_1 : There is a negative relationship between M&A and employment in Africa

1.5 Significance of the Study

The study is important in three ways. First, this study can be said to contribute to the literature on M&A and its impact on employment in Africa in a setting under-researched in the literature. In other words, it adds to the limited studies on the impact of M&A on employment in Africa. Second, the findings of the study will be relevant to industrial policy makers in Africa on how to structurally adjust after an M&A deal.

Third, this study could be relevant to stakeholders such as investors, trade unions, employers, employees and the government, in adopting efficient and mutually beneficial post-merger intergrating strategies that would ensure that interest of stakeholders during and after an M&A deal are protected. In this regard, the study can be said to hold practical implications for management/corporate policy and/or practice.

1.6 Methodology

The study adopted a quantitative approach to test the relationship between M&A and employment in Africa using cross border M&A in dollar values from 14 African countries between 1990 to 2010 (see Appendix I, for list of countries). Employment data of these countries was obtained from the World Bank for the period. A panel regression analysis was performed where the econometric model is estimated using a random effects estimator and defined employment, the variable of interest, as the dependent variable and M&A as the independent variable. The model is however re-estimated using a Feasible Generalized Least Squares (FGLS) estimator which corrected for autocorrelation and

heteroskedasticity. The control variables included in the model are Gross Domestic Product (GDP) growth, inflation, and interest rate. The dataset for the study was obtained from the World Bank and SDC Platinum database. The study also conducted a trend analysis to examine the average growth of M&A in Africa. The study conducted an endogeneity test, multicollinearity test, a heteroscedasticity, and autocorrelation test to investigate the Ordinary Least Square assumptions. This helped to establish the reliability of the dataset used for the study.

1.7 Outlook of Thesis Report

The study is organized in five chapters. The first chapter, which is the introduction, highlights the background to the study, the statement of the problem, the research objective that informs the study, the hypothesis and the significance of the study. It also presented the schematic structure of the entire dissertation.

The second chapter reviewed empirical literature related to this study. Chapter three discussed the methodology of the present work, explaining the characteristics of the data used for the study. The penultimate chapter focused attention on the analysis and discussion of the data collected as well as the testing of the hypothesis. The last chapter highlighted the major findings of the study. It also presented a conclusion to the study, implications and recommendations for further research.

CHAPTER 2: LITERATURE REVIEW

2.1 Introduction

This chapter reviewed existing literature on the impact of M&A on employment. The first section focused attention on the theoretical underpinning of the study. It explained the efficiency and value decreasing theories and shows the differences and similarities between the theories as they relate to M&As. The second section reviewed empirical studies and demonstrated why the study is important in the African context. Thus, the study is situated within the extant literature in order to establish how the present study relates to and departs from existing studies. Consequently, the second part of this chapter highlighted the impact of M&As on employment in Europe, the United States and Asia in a bid to establish the lacuna in the M&A literature that the present fills. The chapter concluded by proposing a more robust methodology for the analysis of the impact of M&As on employment.

2.2 Theoretical Perspectives on M&A and Employment

This study is informed by two main theories used in explaining M&A. They include efficiency theory and value decreasing theory, which are subsequently discussed.

2.2.1 Efficiency theory

According to Trautwein (1990), the efficiency theory views M&As as being planned and executed to achieve synergies. Synergies occur when the combined effect of the merger is economically greater than the sum of the independent companies had the

merger not occurred. There are three types of synergies, namely financial, operational and managerial synergies.

Financial synergy can be achieved by increasing the size of the company in the case of M&As, thereby giving the company access to cheaper capital (Trautwein, 1990). Trautwein (1990) posits that financial synergies may also be achieved through the establishment of internal capital market which may operate on efficient market information and hence, allocate capital in a more efficient manner.

According to Porter (1985) as cited in Trautwein (1990), operational synergy, on the other hand, is concerned with the combination of operations of previously separate units or from the transfer of knowledge. Combining the operations of hitherto separate units or knowledge transfer as a result of M&A may lead to cost reduction in the combined business units and consequently enable the company to offer more unique product or services. The third form of synergy, managerial synergy, is realized when the acquirer's managers possess unique and unmatched planning, monitoring abilities and expertise that are beneficial to the target's financial and operational performance (Trautwein, 1990). The aforementioned synergies can result in cost reduction or increase in sales (Wadhwa & Syamala, 2015). Though cost reduction can be realized in the types of synergies outlined above, companies can also achieve cost reduction by reducing the size of employment. When M&As occur, the combined effect of the merger leads to efficiency and so companies tend to reduce employment (Conyon et al., 2000).

The efficiency theory has been criticized in the literature on M&As. According to Trautwein (1990), the underlying theoretical criticism of the efficiency theory is that financial synergies cannot be achieved in an efficient capital market. There is no research

evidence to show that financial synergies can lead to the lowering of systematic risk (Trautwein, 1990). The works of Kitching (1967) and Porter (1987) also criticized the managerial and operational synergies as elusive concepts that are usually argued for M&As but hardly realized. Porter (1987), again questioned the efficiency theory of M&As by asserting that more than half of M&A deals by US companies failed. Kitching (1967) concluded that financial synergy rather than operational synergy could be realized in M&A deals. Two decades later, Chatterjee's (1986) study, as cited in Trautwein (1990) revealed a similar result.

Going by the efficiency theory, it is widely accepted that the resultant effect of M&A is employee layoffs (Conyon et al., 2000). Thus, in the event that the combined effect of M&A leads to efficiency, less number of people will be required to perform the same task (Kubo & Saito, 2009). So as far as M&A is concerned, the efficiency theory is at variance with the employment size of a company.

2.2.2 Value Decreasing Theory

The value decreasing theory proposes that mergers fail to create value for the combined companies. According to Weitzel and McCarthy (2009), between 60% to 80% of M&As are classified as failures. The first part of the value decreasing theory posits that the bidder's management is 'ironically rational', and as a result makes organizational errors due to information gap despite intentions to create value for the firm. The second asserts that despite the rationality of managers, they make decisions that fail to positively affect the value of the firm because these decisions are self-motivated (Weitzel & McCarthy, 2009).

Within the first category of the value decreasing theory, Roll (1986) in his theory of managerial hubris, as cited in Weitzel and McCarthy (2009), asserted that though managers may have good intentions in increasing the value of the firm after a merger or an acquisition, these intentions are often counterproductive because managers are often overconfident about the prospects of M&As. As a result, they tend to overestimate M&As capacity to create synergies contrary to the efficiency theory. Being overconfident increases the likelihood of a bidder overpaying the value of a merger or an acquisition (Hayward & Hambrick, 1997). Malmendier and Tate (2008), as cited in Weitzel and McCarthy (2009), asserted that this usually exposes the winning bidder in a winner's-course situation. When this happens, mergers tend to fail (Dong et al., 2006).

The theories discussed above bring a couple of macroeconomic issues to the fore. Firstly, what is the relationship between the efficiency and value decreasing theories for which reason most M&As are classified as failures? Are the employment sizes of post-merger deals negatively affected because most mergers are known to fail? Several reasons have been provided to account for the failure of M&As. However, one of the reasons identified which is most relevant to this study is the fact that M&As lead to minimum utilization of employees and working hours (Conyon et al., 2000).

In summary, the efficiency theory is believed to increase the value of the firm (Hitt et al., 2001). By creating value through efficiency, some workers have to be laid off since fewer workers will be needed to accomplish the same task. Meanwhile, the value decreasing theory asserts that M&As fail to create value for the combined companies as managers tend to overestimate a merger's ability to create synergies unlike the efficiency

theory (Wetzel & McCarthy, 2009). This suggests that employees become ‘scapegoats’ when a merger or an acquisition fails.

From the above, it can be observed that there are varying conclusions on the likely impact M&As have on employment. This disparity in conclusions of the theories make the present study on the likely impact of M&A on employment significant.

2.3 Empirical Evidence on M&A and Employment

This section reviews empirical studies across the globe pointing to different conclusions on the impact of M&A on employment. The section included global perspectives on the impact of M&A on employment to provide a preview of the issue addressed in this study. It also included a review of studies from Europe, the US, Asia and Africa and demonstrated that there is evidence to suggest that M&As have concurrent effect on employment.

2.3.1 Global Perspectives on the Impact of M&A on Employment

Some empirical studies examined the impact of M&A on employment in different countries and provided different perspectives on the relationship between M&A and employment. According to Conyon et al. (2000), there is a popular perception that the announcement of M&A is motivated by the prospects of reducing employment size. Kubo and Saito (2009) also argue that M&A provide managers the chance to justify the need to reduce their employment size without facing legal charges. This is typical in countries like Japan with austere labour regulation policies which makes it practically impossible for companies to reduce their employment size under normal circumstances (Kubo & Saito, 2009). As Nene (2012) puts it, “M&As in countries like Japan give

opportunities for companies to retrench or lay off their labour force under the guise of undergoing M&A restructuring”. This presents the argument that when companies enter into an M&A deal, they may use this opportunity to downsize their employment size.

However, the notion of workforce reduction as a result of M&A is debunked by Conyon et al. (2000) who rather suggest a positive impact on employment. As market share of the combined companies increase, employment size must rather increase in order to meet the increased demand of the combined companies’ goods and services. In contrast to Conyon’s et al.’s study, Naveed et al. (2011) found that employee responses from pre- and post- M&As showed that their job security was under serious threat in a post-merger environment.

These studies provide a sneak peek into the broad economic discourse on the impact of M&A on company employment. But more specifically, how does M&A affect the employment size of the combined companies? Does employment increase or decrease in the short-term or long-term? How has M&A evolved in other parts of the world? To provide a more holistic understanding of this issue, the next section focuses on the relationship between M&As and employment in other parts of the world.

2.3.2 The Impact of M&A in the US and Europe

One of the studies on the impact of M&A on employment is Upadhyaya and Mixon’s (2003) study. The authors estimated both short and long-term effects of M&A on employment in the US economy using a time series data from 1895 to 1992 as measured by number of M&A by value per year. They found that M&A activity had a statistically significant negative relationship on unemployment in the long-term.

According to this study, merger activity even helped to reduce unemployment in the short-term. The authors adopted an autoregressive distributed lag model which helped in easily estimating the long-term parameters.

Similarly, a micro level M&A effect study conducted by Green and Cromley (1982) to investigate horizontal M&A on employment in the paper industry in the US revealed interesting findings. The authors found that employments that followed horizontal M&A did increase, making them conclude that there is a positive relationship between short-term employment and M&A. Doytch et al. (2011) also studied the employment effects of M&A in the manufacturing, financial and service sectors of the US economy. They used a time series data from 1978 to 2008 and developed an empirical model with total value of M&A as the explanatory variable. Their study concluded that M&A have helped to increase both short-term and long-term employments in the United States. To ensure robustness of their findings, the authors developed a panel dataset within all sectors before re-estimating the model using a fixed effect estimator.

In addition, Oberhofer (2013) found that M&A had positive effects on employment for the different types of acquisitions considered in his study in Europe, although there were marginal variations in M&A types such as cross-border acquisitions, domestic acquisitions, and horizontal acquisitions. Oberhofer (2013) therefore concluded that his study provides indirect efficiency gains that are orchestrated by acquisitions. One of the key methodological contributions of the work of Oberhofer (2013) lies in his development of an econometric model which enabled convergence dynamics in firm size to be controlled. Positive effects of M&A on employment were also found in Swedish

manufacturing during the 1990s as employment of skilled labour increased as against that of unskilled labour (Bandick & Karpaty, 2009). However, the authors found no strong evidence of workforce reduction following an acquisition.

Contrary to the above literature, Conyon et al. (2000) provided a systematic empirical analysis to investigate M&A effect on employment using 442 companies in the United Kingdom (UK) that had been involved in M&A between the period of 1967 and 1996. Their study revealed that merger activity led to statistically significant workforce reduction and output falls. For mergers that were hostile in nature, post-merger efficiency was adversely affected and still led to significant workforce reduction. In instances where employment falls were not immediate after the merger, they were still likely to be observed even four years after the M&A. The work of Conyon et al. (2000) provides interesting insights for the present study. First, it suggests that the nature of the M&A does not affect the rate at which firms reduce their workforce. In other words, workforce reduction was experienced even when the mergers were hostile or friendly. The study further suggests that in instances where reduction in employment is not realized immediately after the merger, they are still likely to occur in the short to medium term. Consequently, the outcome of workforce reduction realized in the short to medium term after the merger could stem from strict labour regulations or employee retrenchment during a merger. For this reason, Taguchi and Yanagawa (2011) posit that employment evaluation of M&A impact should be conducted at least few years after the M&A to determine its aggregate effect. This is because according to Nene (2012), the analysis of M&A impact on employment may prove difficult to ascertain unless the study is able to capture the delayed effect of M&A on employment.

Similar to the study conducted by Conyon et al. (2000), Gugler and Yurtoglu (2003) found that M&As have not been detrimental to the US economy but there have been negative impacts of M&A on employment in Europe with employment reducing significantly as compared to pre-merger deals. Their study revealed that European M&A reduced labour employment by about 10% on the average. The varying conclusions from Gugler and Yurtoglu's (2003) study raises concerns about disparity in labour regulation laws in the US and Europe. In European markets, because labour laws are strict for which reason firms can hardly reduce the size of their employment under normal circumstance, they rely on M&A as a restructuring mechanism. However in the US, Gugler and Yurtoglu (2003) confirm that mergers need not be used as a means of restoring optimum employment level since managers can do so as and when they deem fit at a relatively low cost. The overall results of this study point to increased employment in the US though not statistically significant.

Also in Finland, Lehto and Bockerman (2008) found that cross border M&As lead to workforce reduction in manufacturing employment. However, Lehto and Bockerman (2008) claimed there was no compelling evidence on the effects of cross-border M&A on non-manufacturing employment. The dataset used by the authors in their study covered almost all the M&As that have occurred in Finland, ensuring the reliability of the dataset and the conclusions arrived at.

2.3.3 The Impact of M&A in Asia

In Japan, several companies have experienced continuous growth in M&As, as the total number of M&As recorded were about 500 between 1990 and 2000 (Taguchi & Yanagawa, 2011). In light of this, Kubo and Saito (2009) opine that in Japan, there is a

significant reduction in employment of about 3.33% after a merger deal. And this usually takes place three years after the M&A deal. It is interesting to note that Kubo and Saito's (2009) study revealed that it may take several years for firms to reduce their workforce size after an M&A deal. They assert that the effects of M&A on employment are usually significant few years after the M&A, but not immediately. Their findings also suggest that employment reduction after M&A deal may not be due to lay-offs, but a temporary stoppage of the recruitment process. However, Nene (2012) argued that Kubo and Saito's (2009) study failed to accurately account for the delayed effect of M&A on employment implying that their results cannot be considered as very reliable.

In an attempt to broaden the scope of Kubo and Saito's (2009) study, Taguchi (2013) and Taguchi and Yanagawa (2011) developed a more dynamic model that spanned for more than 5 years. Using a large dataset of 9,880 sample firms and 2,530 M&A cases from 1995 to 2008, Taguchi (2013) analyzed the type of mergers and argued that acquisitions had positive impacts on employment while mergers had negative impacts on employment in the Japanese economy.

2.3.4 The Impact of M&A in Africa

In Africa, there is a paucity of studies on the impact of M&As on employment. While there seem to be much literature on M&A in Africa, their macroeconomic impacts remain under-researched. In Ghana, some M&A studies only focused on post-merger performance of the banking industry (e.g., Attablayo, 2012; Barnor & Adu-Twumwaah, 2015; Salami, 2015). Other studies also focused on M&A and firm performance and determinants of cross border M&A (e.g., Oduro & Agyei, 2003; Agbloyor et al., 2012). In Nigeria, Gomes et al. (2012) focused on human resource management issues and

outcomes in African M&A while Adaralegbe (2003) studied the legal aspect of mergers in the international petroleum industry. Furthermore, Anwar and Mughal (2016) studied the locational determinants of South African cross-border M&A.

One of the few studies that have investigated the employment effects of M&As was conducted in South Africa by Nene (2012) using 42 listed companies. Nene (2012) found that companies experience growth in their business after an M&A deal, but not in correlation with their workforce. The study conducted a pre- and post-merger financial statement analysis of the companies involved in the merger. However, relying on financial statement analysis may not be reliable in making informed conclusions since accounting practices usually differ from company to company. More so, accounting policies are often influenced by professional opinions.

2.3.5 Conclusions and Research Gaps

The practice of M&A in the finance industry has stimulated much academic research in the finance literature in recent years. However, this literature review demonstrated that most of the studies on the impact of M&A on employment have been conducted in Europe, Asia and the Americas. However, in Africa, the literature on M&A and its impact on employment remains under-researched with the notable exception being Nene's (2012) study.

This literature review has also shown varying conclusions in the aforementioned studies. For instance, in the work of Nene (2012), the results may have been influenced by the sample size, as only 42 listed companies involved in M&A in South Africa were included in the dataset. More so, pre- and post-merger financial statement analysis in the

study conducted by Nene (2012) may not be reliable because accounting practices are usually influenced by professional opinions which usually vary across companies. At the same time, the study conducted by Doytch et al. (2011) and others may not yield the same results if they were conducted in different countries. This is because different countries have different labour regulations and M&A restructuring procedures.

Given that in Africa there is little research on the impact of M&A on employment, this study seeks to fill this gap by examining how aggregate M&A activity affects employment rate in Africa. This study also addresses the methodological shortcomings and the scope of Nene's (2012) study which analyzed a single country in two ways. First, this study focused on 14 African countries and used a panel dataset of M&A values taken from each country between 1990 to 2010. This study also adopted an econometric model to determine the aggregate effects of M&A on employment in Africa.

CHAPTER 3: METHODOLOGY

3.1 Introduction

This chapter describes the methodological approach adopted to achieve the study's objective. The chapter further details out the motivation behind the methodological approach, the research design, description of the dataset used for the study, population and sample size, sampling technique, and specification of the econometric model.

3.2 Research Design

This study is explanatory in nature and adopts a quantitative approach which is aimed at analyzing and observing the behavior of changes in employment with changes in M&A. The study uses the panel vector auto-regression model to examine and to test the relationship between M&A and employment. The Feasible Generalized Least Squares (FGLS) estimator was used for the model estimation and analysis of the regression equation after the random effects estimator failed to correct for heteroskedasticity and autocorrelation.

The FGLS estimator was adopted for the regression analysis for this study due to its ability to correct for heteroskedasticity and autocorrelation and because it can be used to infer causal relationship between the response and explanatory variables. In other words, the FGLS estimator was adopted because the random effects estimator which was suggested by the Hausman test was not reliable. The study also adopts the FGLS model because it allows the prediction of the response variable from a number of explanatory variables. This method is consistent with the works of Upadhyaya and Mixon (2003) ,

Doytch et al. (2011), Agbloyor et al. (2012), Kubo and Saito (2009) among others. The statistical results established by these studies from their OLS regression analysis was reliable hence it necessitated this study to use a similar methodological approach. The use of pre and post merger financial statement analysis is common in most studies such as the work of Nene (2012). However, aside the limitations behind the use of financial statement analysis, the use of financial statement analysis is not applicable in this study because the study used historical M&A and employment values from 1990 to 2010. Thus, the only feasible methodology and statistically reliable approach is the FGLS regression analysis.

3.3 Data

The data used in this study comprised M&A in dollar values, employment, inflation rates, Gross Domestic Product (GDP) growth and interest rates of 14 African countries. The sources of the data are SDC Platinum database and the World Bank. The M&A in dollar values were obtained from SDC Platinum database while Employment, Inflation, GDP growth and interest rate were obtained from the World Bank. SDC Platinum database is a reliable source for global financial transaction database with detailed financial transactions such as M&A, Bonds among others. The SDC Platinum database had M&A in dollar values of all the 14 African countries under consideration from 1990 to 2010. Employment, Inflation rates, GDP growth and interest rates were obtained from the World Bank because it is a credible source for macro economic indicators.

3.4 Population and Sample

The population of the study is African M&A market. The study is conducted on 14 African countries that have engaged in M&A from 1990 to 2010. This sample focused mainly on countries with active M&A and where the acquirer acquires more than 10% equity of the target firm. This is a consistent justification with the work of Abgloyor et al. (2012) who also used a similar dataset of M&A values in their analysis. Moreover, M&A deals on the African continent are not as rigorous as compared to deals in international markets. This made it impossible for the study to use a larger sample size like the panel dataset of 9,880 sample firms used by Taguchi (2013). However, studies on impact of M&A on employment conducted in South Africa by Nene (2012) used 42 companies whereas studies on impact of M&A on other macro economic indicators in Africa conducted by Agbloyor et al. (2012) used 14 African countries.

It is worthy to note that although 14 African countries are used in this study, a larger sample size and panel dataset of 260 M&A samples from 1990 to 2010 is created. In addition, the study covers a period of twenty years which is more than the twelve-year period used by Nene (2012) and the thirteen-year period used by Taguchi (2013). As a result of the twenty-year period and the use of panel dataset in this study, a larger sample size is created which fairly represents the population thereby making analysis of the results reliable. The sampling technique used by this study is convenience sampling because it is based on availability of data. This sampling technique is consistent with the work of Nene (2012), Taguchi (2013) and Agbloyor et al. (2012).

3.5 Model Specification

The panel vector autoregression (Panel Var) analysis using the FGLS estimator is used to explore the relationship between M&A and employment. This study uses a modified version of the regression model used by Doytch et al. (2011). In order to capture the delayed effect of M&A on Employment, the model developed for this study is represented below in equation (1) as:

$$EMP_{it} = \beta_0 + \beta_1 MA_{it} + \beta_2 MA_{-it} + \beta_3 \sum_{j=3}^N X_{it} + \mu_{it} \dots \dots \dots \text{eqn(1)}$$

Where EMP is total Employment of labour and MA, is M&A in dollar values. In estimating the effect of M&A on Employment, the model controls for INF which represents Inflation rate, GDPgrth which represents Gross Domestic Product growth, INT is lending Interest rates and μ represents the random error term. The inclusion of other relevant variables in the regression model of this study other than that of Doytch et al. (2011) is justified in the subsequent section as seen in other empirical studies. According to Doytch et al. (2011), the immediate effect of M&A on employment can be negative due to efficiency gains which require fewer workers to accomplish the same task. Thus, this study expects a negative effect of MA on employment.

3.6 Definition of Variables

3.6.1 Dependent Variable (Employment)

The dependent variable in the study is the total Employment of labour which is defined as percentage of total labour force. Doytch et al. (2011) also used employment as dependent variable for their studies. It is the main variable of interest.

3.6.2 Independent Variables

The independent variables included in this study are M&A in dollar values, inflation rate, GDP growth and lending interest rates.

3.6.2.1 M&A in Dollar Values

In developing the econometric model for this study, the study adopted the approach of Doytch et al. (2011). Similar to the work of Doytch et al. (2011), M&A in dollar values is included in the model because it is the independent variable of interest. M&A in dollar values were obtained from SDC Platinum Database.

3.6.2.2 Inflation

Inflation had to be controlled in the model for this study because inflation affects M&A activity and consequently employment level. Boateng et al. (2014) found that M&A activity among UK firms during the period 1990 to 2008 had a negative relationship with inflation though not statistically significant. More so, Black (2000) found that M&A deals among American companies between 1985 and 1999 had a negative relationship with inflation. The inclusion of inflation as a control variable in this study is relevant because inflation significantly affects investors' decision when making investment (Wang, 2015). Inflation rates for the period under consideration were obtained from the World Bank.

3.6.2.3 GDP Growth

It is important to control for GDP growth in the model as GDP is an indicator of national wealth and general economic performance. Rossi and Volpin (2004) found a statistically significant and positive relationship between GDP and M&A deals. Their

study covered a sample of 49 countries between 1990 and 2002. In addition, Deng and Yang (2014) also found that GDP growth had a positive relationship between M&A deals after using M&A deals in a panel regression analysis. Their study covered nine emerging countries between 2000 and 2012. GDP growth for the period under consideration were obtained from the World Bank.

3.6.2.4 Lending Interest Rates

Another relevant control variable in this study is interest rates. According to Wang (2015), interest rate determines cost of financing and therefore it is regarded as one of the most imperative macroeconomic factors and considerably affects investors' decision when making investment. Tolentino (2010) studied the relationship between macroeconomic indicators and foreign direct investment (FDI) as a form of M&A and found a statistically significant and positive relationship between FDI as a form of M&A and interest rates. On the other hand, Uddin and Boateng (2011) found contradictory results to that of Tolentino (2010). Uddin and Boateng (2011) found a statistically positive relationship between interest rates and cross-border M&A outflows among UK firms but negative and statistically significant relationship between interest rates and cross-border M&A inflows among UK firms. This contrasting results necessitated the inclusion of interest rates as a control variable which was omitted by Doytch et al. (2011) and Upadhyaya and Mixon (2010). Interest rates are obtained from the World Bank.

3.7 Diagnostic Tests

The study conducted diagnostic tests such as test of heteroscedasticity and multicollinearity. This was done in order to test the assumptions of the OLS regression and to determine whether the predictive results of the relationship between the independent variables and the dependent variable in the hypothesis could be accepted as statistical and significant description of the data.

The Breush-Pagan test of heteroscedasticity was used to test the variance of the model developed by the study and to determine if the error variance is as a result of the independent variables. The study also used the correlation matrix to test for multicollinearity among the independent variables..

In the model developed by Doytch et al. (2011), they argued that macroeconomic time series data are non-stationary hence the use of non-stationary data may produce spurious results. Doytch et al. (2011) therefore conducted Augmented Dickey-Fuller (ADF) and Phillips-Perron (P-P) test in order to check for stationarity in their data. This study also uses non-stationary data; therefore, the Fisher-Type unit root for ADF test of panel data was conducted in order to check for stationarity in the dataset used in the model. In general, these tests helped to establish authenticity and reliability of estimates generated from the FGLS regression analysis.

CHAPTER 4: DATA ANALYSIS, RESULTS AND DISCUSSION

4.1 Introduction

This chapter focuses on how the test of M&A effect on employment was analyzed. The results of the analysis are discussed and descriptive analysis is drawn on to explain the characteristics of the data used in this study. The hypothesis of the study was tested using inferential analysis. The results of the analysis are discussed in comparison with other studies and contrasting results are accounted for. Thus, discussion of the results is based on how the present study relates to and departs from other studies.

4.2 Descriptive Statistics

This section describes the characteristics of M&A in dollar values, employment, inflation, interest rate and GDP growth. Descriptive statistics such as median, mean, standard deviation, skewness, kurtosis and others are discussed below. Table 1 presents a summary of the descriptive statistics of the variables used in this study.

Table 1: *Descriptive statistics of Variables*

	MA	EMP	GDPgrth	INF	INT
Mean	873.5097766	88.36658928	4.307245304	89.35982918	28.36999651
Median	77.448	89.86999989	4.549468361	8.599627651	17.92208333
Standard Deviation	2517.336233	6.950786875	4.285295224	277.1170077	58.25645208
Sample Variance	6336981.71	48.31343818	18.36375516	76793.83594	3393.814209
Kurtosis	28.72860106	-0.540544568	12.20529323	11.8963964	62.50385098
Skewness	5.060621351	-0.59351594	-0.187597869	3.624263693	7.570257701
Range	18448.066	28.83000046	51.40472163	1342.830305	570.9583333
Minimum	0.01	70.22999954	-17.6689466	-0.287508512	8
Maximum	18448.076	99.06	33.73577503	1342.542796	578.9583333
Sum	172081.426	24742.645	1206.028685	25020.75217	5673.999302
Count	197	280	280	280	200

Source: Author's Estimation

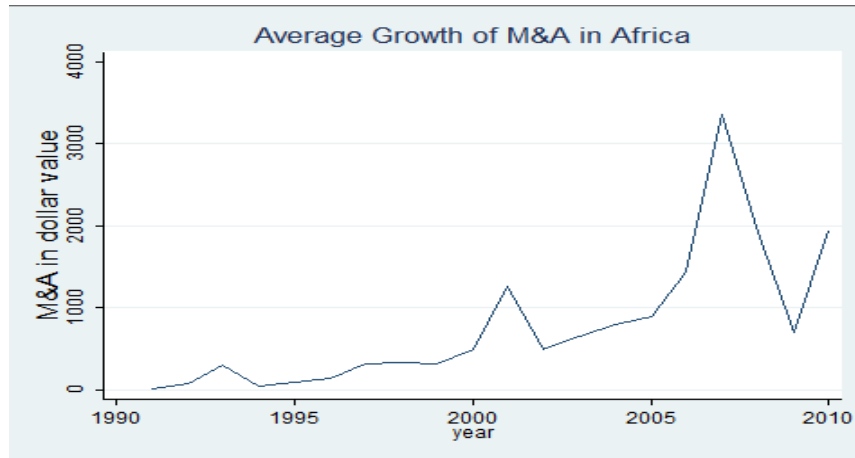
In all, the observations ranged from one hundred and ninety-seven (197) to two hundred and eighty (280). From Table 1, it can be inferred that the gaps between the means and medians of the variables almost converge except for MA and INF, which have wider gaps between their means and medians, making the variables skewed to the right. On the other hand, the standard deviation measures dispersion of the data around its mean. The results from Table 1 shows that the variables are moderately spread out around their means. For instance, the standard deviation of EMP shows that on average, the size of employment deviates from its mean by about 6.95.

Table 1 also shows the minimum and maximum values of each variable. M&A (MA) was at an all-time low in 1991 and at an all-time high in 2010. Similar to M&A, Employment (EMP) was also at its lowest in 1991 and highest in 2010. The kurtosis values of MA, GDPgrth, INF and INT, (i.e., 28.7, 12.2, 11.9 and 62.5), which are all

greater than three, indicate that their distribution is peaked (leptokurtic) in relation to the normal.

4.2.1 Average Growth of M&A in Africa

Figure 1: *Average Growth of M&A in Africa*



Source: Author's Estimation

The average growth of M&A in Africa since 1991 has been rising steadily. This is shown in Figure 1 above. From Figure 1, the average growth in M&A grew steadily from 1990 and peaked between 2005 and 2010. This was because of the high economic growth experienced in Africa in these years. For instance, a consumer market of 1 billion and the discovery of more natural resources made the continent an attractive investment destination (African Development Bank, 2012). According to the African Development Bank (2012), M&A is expected to grow. Thus, in Figure 1, M&A is seen to have a positive slope from 2010.

4.3 Inferential Statistics

The study aimed at determining the relationship between M&A and employment. The dependent variable, employment was regressed against M&A. Yearly GDP growth, Interest rate, and Inflation were used as control variables. Using Stata, pooled, random and fixed effects regression analysis of the panel data were run after which a Hausman test was performed in order to determine the best econometric model that fits the data.

4.3.1 Unit Root Test

In the analysis of a macroeconomic time series data, it is imperative to determine if the dataset is stationary or not. Usually, non-stationary dataset inflates the R^2 even when the variables do not have a statistically significant relationship. Using non-stationary data to estimate a model can produce spurious results (Doytch et al., 2011). Spurious regression is a statistical phenomenon where regression results show a statistically significant relationship between the variables under study even though in reality such a relationship does not exist (Patterson, 2000). Thus, before the panel regression was performed using the data, the fisher-type unit root test based on Augmented Dickey-Fuller (ADF) Test was conducted in order to ensure stationarity in the data before using it for the analysis. The fisher-type unit root test based on ADF test was used because it allows one to conduct a unit root test for unbalanced panels. The null hypothesis is presented below:

H_0 : All panels contain unit roots. The decision criterion is that, when the p-values of the variable is less than the significance level of 5%, the null hypothesis is rejected in favor

of the alternate hypothesis which states that at least one panel is stationary. The ADF results are shown in Table 2 below.

Table 2: Fisher-type unit-root test based on ADF test

Variable	lag length selection		Statistic	P-value	Null Hypothesis
EMP	Level	Inverse chi-squared (28)	60.0308	0.00040	Reject
MA	Level	Inverse chi-squared (28)	174.1273	0.00000	Reject
GDPgrth	Level	Inverse chi-squared (28)	215.4369	0.00000	Reject
INF	Level	Inverse chi-squared (28)	63.7412	0.00010	Reject
INT	Level	Inverse chi-squared (28)	29.9797	0.11900	Fail to reject
INT	First Difference	Inverse chi-squared (28)	49.9274	0.00060	Reject

Source: Author's Estimation

The results of Table 2 show that at levels, all the variables except INT have p-values less than the significance level of 5%. Thus, the null hypothesis is rejected. This implies that all the variables are stationary at levels except INT. However, at first difference, INT is stationary hence the null hypothesis that all panels contain unit root test is rejected. Therefore EMP, MA, INF, and GDP grth are all stationary at levels while INT is stationary at first difference.

4.3.2 Multicollinearity Test

Another test that was performed in order to ensure the reliability of the dataset before the panel regression was the correlation matrix. The correlation matrix was used to determine if there were any strong positive or negative relationship between the independent variables. According to Talla (2013), the presence of multicollinearity

inflates the standard errors of the coefficients, making the regression results less reliable.

The results of the correlation matrix are shown in Table 3.

Table 3: *Correlation Matrix*

e (V)	MA	L.MA	GDPgrth	D.INT	INF	cons
MA	1.0000					
L.MA	-0.5471	1.0000				
GDPgrth	-0.0628	0.0247	1.0000			
D.INT	-0.0064	0.0046	0.1618	1.0000		
INF	0.0547	0.0658	0.3227	-0.2227	1.0000	
Cons	-0.141	-0.1567	-0.6373	-0.1054	-0.4694	1.0000

Source: Author's Estimation

From Table 3, it can be seen that there is no perfect collinearity between any two variables. More so, there is no high correlation between any two variables. Thus, the panel dataset is reliable to be used in the regression model.

4.3.3 Fitting a Model for the Estimation

Table 4: *Regression Output*

Pooled Regression Output				
EMP	Coefficient	Standard Error	t-Statistic	Probability
logMA	-.7163292	.3039821	-2.36	0.020
logLMA	-.559991	.3172726	-1.77	0.080
GDPgrth	.3570192	.1325882	2.69	0.008
D.INT	.0211425	.020025	1.06	0.293
INF	.0038328	.0020449	1.87	0.064
CONS	92.19129	1.714326	53.78	0.000
Random Effect				
EMP	Coefficient	Standard Error	Z	Probability
logMA	-.0111214	.1435613	-0.08	0.938
logLMA	.0159917	.1435413	0.11	0.911
GDPgrth	.054091	.0593643	0.91	0.872
D.INT	.0064786	.0101203	0.64	0.522
INF	-.0003944	.0035533	-0.11	0.912
CONS	88.28805	2.328783	37.91	0.000
Fixed Effect				
EMP	Coefficient	Standard Error	T	Probability
logMA	.0291802	.146006	0.20	0.842
logLMA	.0127367	.1442104	0.09	0.930
GDPgrth	.061395	.0604027	1.02	0.312
D.INT	.0016364	.0109498	0.15	0.882
INF	-.0030935	.0042806	-0.72	0.472
CONS	88.00787	.9830674	89.52	0.000

Source: Author's Estimation

The analysis of a panel data may require the use of a pooled panel OLS regression, the use of random or fixed effect estimator. Table 4 shows the output of pooled, random effect and fixed effect regression. Before estimation, MA and its lagged value, LMA are transformed into their natural log forms in order to reduce the effects of

outliers in the model. Because interest rate is stationary at first difference, INT is replaced with D.INT which is the stationary value in the model. For the analysis, the pooled regression was performed to determine the suitability of the model and whether the explanatory variables have a significant relationship with the dependent variable. One of the key assumptions of independently pooled panels is that unique attributes of individuals within the dataset are not present and that there are no universal effects over time. From the pooled regression output in Table 4, it can be realized that the model is suitable since three independent variables (logMA, logLMA, GDPgrth) have a significant influence on EMP.

However, random and fixed effects models are the most common methods used in analyzing panel data. The key assumption of the random effect model is that the unique, time invariant attributes of the dataset are not correlated with the individual regressors while the fixed effect model assumes that the unique attributes of the individuals in the dataset do not vary over time, which may or may not be correlated with the individual predictor variables. However, in order to determine the appropriate model to be used in this study, a Hausman Test was performed. Table 5 shows the results of the Hausman Test and the appropriate model to be used in this study.

4.3.4 Hausman Test

Table 5

HAUSMAN TEST				
	Fixed	Random	Difference	S.E
logMA	.0374296	.0095528	.0278768	.
logLMA	.0094589	.001887	.0075719	.
GDPgrth	.0582055	.037775	.0204306	.009958
INT	-.0097813	-.0003789	-.0094024	.0049535
INF	-.0100887	-.0014659	-.0086228	.0046238
P-Value=0.8174				

Source: Author’s Estimation

For the Hausman Test, the null hypothesis states that difference in coefficients is not systematic. The decision criterion is that the null hypothesis of non-systematic difference in the coefficients will be rejected if the p-value is less than the significance level of 5%. From Table 5, the p-value is 0.8174 which is greater than the significance level of 5%. Thus, we fail to reject the null hypothesis of non-systematic difference in the coefficients. Therefore, the appropriate model for the panel regression analysis is a random effect estimator.

4.3.5 Random Effect Model Estimation

Based on Table 5, the estimated model for the study is shown in equation 2 and the random effect model with results from the regression output is shown in equation 3.

$$EMP_{it} = \beta_0 + \beta_1 MA_{it} + \beta_2 MA_{-it} + \beta_3 \sum_{j=3}^N X_{it} + \mu_{it} \dots \dots \dots \text{eqn(2)}$$

$$EMP_{it} = 88.58244 - .0330253MA_{it} + .0260178 MA_{-it} + .0541798GDPgrth_{it} + .0107344D.INT_{it} - .0015728 INF + \mu_{it} \dots \dots \dots \text{eqn(3)}$$

4.4 Residual Diagnostics

It is important to conduct a residual diagnostic in order to test the adequacy of the random effect estimator used in this study. This is because it is important to determine if the assumptions of the model are correct and reliable before making statistical inferences or deductions. This helps to show confidence in the model used in this study to reject or accept the null hypothesis in an academic research. The following tests were therefore conducted.

4.4.1 Test for Autocorrelation

The Wooldridge test for autocorrelation in panel data was used to test for the presence of serial autocorrelation. Estimates are inefficient in the presence of autocorrelation (Upadhyaya & Mixon, 2010). The hypothesis to be tested is presented below in the null form:

H_0 : There is no first order autocorrelation

Table6: *Wooldrige Test for Autocorrelation*

Wooldridge test for autocorrelation	
F(1, 7)	22.2597
Prob>F	0.0021

Source: Author's Estimation

Table 6 summarizes the results of the Wooldridge test for autocorrelation.

Since the p-value of 0.0021 is less than the significance level of 5%, the null hypothesis of no autocorrelation is rejected. This means that there is the presence of autocorrelation in the random effect estimator hence the estimates are unreliable.

4.4.2 Heteroscedasticity Test

Another test conducted in order to determine the robustness of the model was the heteroscedasticity test. The results of the random effect estimator cannot be relied upon in the presence of heteroscedasticity. Thus, the study used the Breush-Pagan/ Cook-Weisberg test for heteroskedasticity whose null hypothesis states that there is constant variance in the model. The results of the test are shown in Table 7.

Table 7: *Breush-Pagan/ Cook-Weisberg test for heteroskedasticity*

Ho: Constant variance	
Variables: fitted values of employment	
chi2 (1)	9.08
Prob>chi2	0.0026

Source: Author's Estimation

The results of the test in table 7 show that the p-value is 0.0026, which is less than the significance level of 5%. Hence the null hypothesis of homoscedasticity is rejected. This implies that there is the presence of heteroskedasticity in the model and therefore the random effect estimator cannot be relied upon.

4.5 The FGLS Model: Correlation for Autocorrelation and Heteroskedasticity

The residual diagnostics tests above have confirmed the presence of autocorrelation and heteroskedasticity. In the presence of autocorrelation and heteroskedasticity, the estimates are inefficient and unreliable (Upadhyaya & Mixon, 2010). Therefore, the estimates generated from the random effects model cannot be relied upon in making statistical inference. To correct autocorrelation and heteroskedasticity in the model, the study can adopt the Robust Standard Error approach or the Feasible Generalized Least Squares (FGLS) model. However, the study adopted the FGLS model because it is known to be asymptotically valid in large sample datasets. Thus, according to Baltagi (2001), in the presence of autocorrelation and heteroskedasticity in random effects model, the FGLS is the standard way for estimation. The FGLS estimator is also a weighted least squares (WLS) estimator. In order to estimate a model for the FGLS, equation 2 is transformed to its FGLS form without the presence of autocorrelation and non-constant variance. This transformation is as follows:

$$w_{it}EMP_{it} = \beta_0 + \beta_1 w_{it}MA_{it} + \beta_2 w_{it}MA_{-it} + \beta_3 \sum_{j=3}^N w_{it}X_{it} + w_{it}\mu_{it} \dots\dots eqn 4$$

This model is obtained by multiplying both sides of the statistical equation by an appropriate weight, w_{it} . The model is transformed such that it has a constant variance of 1, and thus a homoscedastic error term. The FGLS estimates is shown in the Table 8.

Table 8: *FGLS Estimates*

Coefficients:	generalized least squares			
Panels:	homoskedastic			
Correlation:	no autocorrelation			
Estimated Covariances	1			
Estimated autocorrelations	0			
Estimated coefficients	6			
EMP	Coef.	Std. Err.	Z	P> z
logMA	-0.71633	0.296016	-2.42	0.016
logLMA	-0.55999	0.308958	-1.81	0.07
GDPgrth	0.357919	0.129114	2.77	0.006
D1.INT	0.021143	0.0195	1.08	0.278
INF	0.003833	0.001991	1.92	0.054
Cons	92.19129	1.669401	55.22	0

Source: Author's Estimation

From Table 8, the re-estimated model for the study is shown in equation 6 below:

$$w_{it}EMP_{it} = 92.19129 - 0.7163292w_{it}MA_{it} - 0.559991w_{it}MA_{-it} +$$

$$0.3570192w_{it}logGDPgrth_{it} + 0.0211425w_{it}INT_{it} + 0.0038328w_{it}INF_{it} + w_{it}\mu_{it}$$

..... eqn (6)

4.5.1 Interpretation of Regression Output

4.5.1.2 Standard Error

From Table 8, it can be realized that the panels are homoscedastic with no autocorrelation and a constant variance of one. Thus, the FGLS model is more reliable than the random effect model. The standard errors of the co-efficient of the variables used in the FGLS model is estimated in Table 8. The statistical noise in the estimates are higher given a higher standard error. Thus, the standard error depicts statistical validity and reliability of the estimated coefficients. From Table 8, the standard errors of the co-efficient of both logMA and logLMA are 0.2960162 and 0.3089583 respectively. The standard errors of the co-efficients of GDPgrth, D.INT, INF are 0.1291136, 0.0195003 and 0.0019913 respectively. Since the standard errors of the coefficients of the variables are generally lower, it follows that the FGLS model can be relied upon.

4.5.1.3 Effect of Variables on Employment

Table 8 shows the estimated co-efficient for M&A (logMA) and its lagged value logLMA which are -0.7163292 and -0.559991 respectively. It shows that there is a negative relationship between M&A and employment and a negative relationship between the delayed effect of M&A and employment. This represents the average effect of M&A over employment when MA changes across time and between countries by one percent. The p-value for logMA is 0.016 and that of logLMA is 0.070. Since the p-value for logMA is less than the significance level of 5%, it follows that the negative relationship between logMA and employment is statistically significant while the negative relationship between logLMA and employment is not statistically significant

since its p-value is greater than the significance level of 5%. This implies that the null hypothesis that there is no relationship between M&A and employment in Africa is rejected. Thus, if M&A changes across time and between countries by one percent, it will lead to an average reduction in employment by $(-0.7163292/100)$ units.

Furthermore, the coefficient of GDPgrth (0.3570192) shows a strong positive relationship between employment and GDPgrth. Thus, if GDPgrth changes across time and between countries by one percent, it will lead to an increase in employment by 0.3570192 units. This positive relationship between employment GDPgrth is statistically significant. This is because the p-value of 0.006 is less than the significance level of 5%. Thus, we reject the null hypothesis that there is no relationship between GDPgrth and employment in Africa. This relationship between GDP growth and employment is consistent with the work of Rossi and Volpin (2004) and Deng and Yang (2014).

In addition, the co-efficient of logLMA which is the delayed effect of M&A, interest rate and inflation are -0.559991, 0.0211425, and 0.0038328 respectively. This implies that there exists a negative relationship between logLMA and employment, while interest rate and inflation have a positive relationship with employment. The positive relationship between interest rate and employment is also consistent with the work of Tolentino (2010) but contradictory to that of Uddin and Boateng (2011). The p-value for interest rate is 0.278 which is greater than the significance level of 5%. Hence this relationship is statistically insignificant.

Moreso, the positive relation between inflation and employment departs from the work of Boateng et al. (2014). Black's (2000) study also had different results from his study. Intuitively, a higher inflation leads to reduction in employment as cost of

production becomes higher. Thus, the study by Black (2000) and Boateng et al. (2014) found a statistically negative relationship. However, the p-value for inflation is 0.054 which is slightly greater than the significance level of 5%. This implies that there exists a statistically insignificant relationship between inflation and employment.

Based on the FGLS regression output in Table 8 with lower p-value less than the significance level of 5% for M&A, we reject the null hypothesis that there is no relationship between M&A and employment in Africa. However, we fail to reject the null hypothesis that there is no relationship between employment and delayed effect of M&A, interest rate and inflation in Africa.

4.6 Discussion

The performance of residual tests on regression analysis is imperative because once autocorrelation and heteroscedasticity concerns are addressed, the model becomes reliable for making statistical inference. The initially proposed model by the Hausman Test, which is the random effect model, showed inefficiencies due to the presence of heteroskedasticity and autocorrelation. This necessitated a transformation of the initial model into an FGLS estimator which corrects heteroskedasticity and autocorrelation. Thus, the regression output by the FGLS estimator can be relied upon for making statistical inference.

It can be deduced from the regression output that there was a statistically significant negative relationship between M&A and employment. Though the regression output also shows a negative relationship between the delayed effect of M&A and employment, this relationship is statistically insignificant. Based on the analysis of the

regression output, it can be established that on average, M&As have a negative effect on employment in Africa.

This negative relationship between M&A and employment corroborates some previous studies. Kubo and Saito (2009), Conyon et al. (2000), Nene (2012) and Gugler and Yurtoglu (2003) postulated that there is a negative relationship between M&A and employment. Thus, the aforementioned studies relates with the current study on the notion that M&As lead to employment reduction. The work of Conyon et al. (2000), Nene (2012) and Taguchi and Yanagawa (2011) also found that there is a delayed effect on the impact of M&A on employment. They argued that the effect of M&A on employment may be delayed. Interestingly, the regression output from the FGLS estimator revealed that the negative relationship between the delayed effect of M&A and employment is statistically insignificant. Thus, this study rather suggests that the negative relationship between M&A and employment is immediate and not delayed. For instance in Ghana, the acquisition of Capital Bank and UT Bank by Ghana Commercial Bank resulted in about one thousand workers of both Capital Bank and UT Bank losing their jobs in less than 5 months (Amihere, 2017).

Contrary to the above, the work of Upadhyaya and Mixon (2003) revealed that M&A had statistically significant positive relationship on employment in both short and long term in the U.S. More so, Green and Cromley (1982) and Doytch et al. (2011) found significant positive relationship on the impact of M&A on employment in the US. Similarly, the work of Oberhofer (2013) also found positive impact of M&A on employment in Europe. Despite the similarities between the current study and the previous studies mentioned above, the findings of this study on the impact of M&As on

employment in Africa departs from other conclusions drawn in the M&A literature (e.g., Upadhyaya & Mixon, 2003; Green & Cromley, 1982; Doytch et al., 2011). More specifically, Doytch et al. (2011) and Upadhyaya and Mixon (2003) found statistically significant positive relationship between M&A and employment in the US. Oberhofer (2013) and Bandick and Karpaty (2009) also found statistically significant and positive relationship between M&A and employment. However, it is also interesting to note that in a similar European study, Conyon et al. (2000) found that M&A rather led to employment reduction in the UK. In Japan, while Kubo and Saito (2009) found a negative relationship between M&A and employment, Taguchi (2013) and Taguchi and Yanagawa (2011) found a positive relationship between mergers and employment.

Unsurprisingly, it is deducible that the conclusions arrived at in this study are inconsistent with some of the aforementioned studies conducted in Europe, the Americas and Asia. One of the reasons that accounts for this disparity in conclusions is the difference in methodological approaches. For instance, Upadhyaya and Mixon (2003), Doytch et al. (2011), Oberhofer (2013) adopted an autoregressive distributive lag model, a fixed effect estimator and an econometric model which allowed convergence dynamics to be controlled respectively. Similarly, in this study, a panel dataset was developed before the model was re-estimated with an FGLS estimator which was consistent with the methodology adopted by Doytch et al. (2011). The differences in statistical procedures may explain why research findings sometimes differ (Sweeney et al., 1996).

Another possible reason that accounts for the disparity in conclusions is the difference in economic conditions between emerging markets like Africa and developed markets like Europe and the Americas. Though M&As between developed and emerging

markets have increased over the years, the majority of these deals are still recorded in developed markets because of favorable economic conditions (Kearney, 2013). Thus, one can argue that the favorable economic conditions in developed markets make M&A an attractive restructuring and expansion device for corporations. In other words, the difficulties associated with post-merger integrations are cancelled out by a favorable economic climate, which companies in developed markets tend to benefit from in the form of increase in company market size and employment. This could explain why studies conducted by Doytch et al. (2011), Upadyaya & Mixon (2003) among others found that M&A has a positive relationship with employment; all of which were studies conducted in developed markets.

More so, the difference in labour regulations between emerging markets and developed markets could be a reason for the disparity in conclusions as far as the impact of M&A on employment is concerned. In developed markets like Europe, companies rely on M&A to alter employment size due to strict labour regulations. However, in America, companies can alter employment size under normal circumstances due to relatively flexible labour regulations and therefore do not rely on M&A as a restricting device (Gugler & Yurtoglu, 2003). Todd and Laubscher (2016) indicate that different African countries regulate the employment impact of M&A differently. The cost of employment redundancies after an M&A deal necessitate employment reduction in Africa (Todd & Laubscher, 2016). Also in Africa, the extent to which a buyer or seller is willing to take on employee obligations after M&A deal may be voluntary (Todd & Laubscher, 2016). Thus, the difference in labour regulations and economic conditions are sufficient reasons to expect varying conclusions with regard to the impact of M&A on employment.

In addition to M&A, other variables influence employment. This study found GDP growth positively influencing employment with a coefficient of 0.3570192 and a p-value of 0.006. The analysis of this study suggests that what increases employment in Africa is not M&A but GDP growth. In support of this analysis, Mukwaya (2012) argued that Africa's economic growth over the last decade has created many jobs. However, the International Monetary Fund (2016) maintains that there are variations on how employment in countries respond to GDP growth.

4.7 Limitations

The study faced some challenges which might have altered the results of the analysis. One of the challenges faced by the researcher was failure to classify the types of mergers. Oberhofer (2013) and Green and Cromley (1982) examined the impact of the various types of M&A on employment. This could mean that the decision to treat all M&A deals as one in this study could have affected the results of the analysis. However, the study could not have surmounted this challenge due to difficulty in obtaining M&A dataset for Africa. Consistent with this study, studies conducted by Upadhyaya and Mixon (2010) and Doytch et al. (2011) examined the impact of M&A and not the various forms on employment.

Another limitation encountered by the study was the challenge of missing dataset for some countries. Dong and Peng (2013) argue that in quantitative research, missing datasets are more of a rule rather than an exception. One disadvantage of using missing dataset in an academic research is increased standard errors (Dong & Peng, 2013). However, though missing dataset was a challenge, the standard errors from the FGLS estimator were significantly lower. This implies that the missing data could not

have significantly skewed the results of the analysis. Thus, the dataset for this study to analyze the impact of M&A on employment in Africa is statistically reliable.

CHAPTER 5: CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction

This chapter presents a summary of the study. It also presents conclusions drawn from the results of the study and recommendations for future research and policy formulation. This section is divided into summary of findings, conclusion, implication, and recommendations for future research.

5.2 Summary

The overarching objective of this study was to test the impact of M&A on employment in Africa. To achieve this goal, the study developed a panel dataset before re-estimating the model using an FGLS estimator. The FGLS regression results show that there is a statistically significant and negative relationship between M&A and employment. Thus, an increase in M&A will lead to a reduction in employment. The study also found a positive relationship between employment and GDP growth which corroborates empirical reports from the United Nations Economic Commission for Africa (2012). However, the other control variables included in the model such as interest rate and inflation had a statistically insignificant relationship with employment. In general, the FGLS estimator predicts that as M&A increases in Africa, employment is expected to fall.

5.3 Conclusion

The study rejects the null hypothesis that there is no relationship between M&A and employment in Africa. The study found that there is a statistically significant and negative relationship between M&A and employment in Africa. The negative relationship between M&As and employment in Africa is due to the efficiency theory which requires fewer workers to accomplish the same task. This result is consistent with the results of Nene (2012), Conyon et al. (2000), Gugler and Yurtoglu (2003) and Kubo and Saito (2009). The study rather postulates that the positive relationship between M&A and employment which was found in studies conducted by Doytch et al. (2011), Upadhayaya and Mixon (2010), Green and Cromley (1982), Oberhofer (2013) and Bandick and Karpaty (2009) is not necessarily applicable to the African context as GDP growth was noted to rather increase employment.

Furthermore, the disparity in the conclusions of this study and previous studies may be due to differences in methodological approaches, economic conditions and labour regulations. Different methodological approaches are known to give different results (Sweeney et al. 1996). Also, unlike emerging markets like Africa, favorable economic conditions in developed markets could be a reason why M&As have positive relationship with employment. Favorable economic conditions such as interest rates, corporate taxes, financial openness, political stability and stock market development are positively correlated with international M&A activity (Dang, 2015). These conditions positively affect international M&A activity which consequently influences the level of employment.

In summary, M&As in Africa have a statistically significant negative relationship with employment. Policy makers in Africa should not rely on M&A as a means of increasing employment; rather, they should focus on other macroeconomic indicators like GDP growth which has been identified from this study to have a positive relationship with employment.

5.3.1 Implication for Employers

Employers faced with an M&A decision should avoid ignoring the extent of impact an M&A could have on their employees. This may require careful examination of the organizational cultures of both the acquirer and target firms. The cumbersome task of trying to meld two different organizational cultures in an M&A deal may prove to be disastrous in which case human resource may be affected. Organizational cultural clash could also lead to more fall outs creating temporary but undesired unemployment. Thus, if an M&A is expected to negatively affect the organizational culture of the combining companies, it should be discouraged or sound cultural change strategies should be designed to mitigate that effect. Employers should not only consider the monetary benefits of lucrative M&A deals such as improved finance and less duplication of roles because successful lucrative deals have proven to be disastrous in the long-term. Inasmuch as managers focus on shareholder wealth maximization, the interest and well-being of employees are indispensable.

Every M&A leads to change. Thus, corporations are encouraged to provide their leaders and employees with the requisite change management knowledge, procedures and mechanisms that will enable the organization to sail through the phases of change with minimum loss and disruption (Whittle, 2002). In instances where disruption is

unavoidable, these organizational change processes may be helpful in supporting employees to adapt and feel less victimized (Whittle, 2002). Layoffs because of M&A deal can lead to psychological and physical devastation. Therefore, companies must be ready to 'invest' in employees who lose their jobs by offering them compensation packages, providing them with psychological insurance, among other forms of recompense. Fair standards and clear guidelines must be applied in determining employees who lose their jobs and the criteria used to lay off employees should be clarified. This implication leads to the following question; if I were a manager/employer and I were informed that the merger I am about to enter into will create unemployment, would I care? If I would, why?

5.3.2 Implication for Employees

Employees should be aware of the fact that in their working life, they are likely to be a part of an M&A deal. With this knowledge, they must be ready to face the consequences of an M&A deal. Though they are in no position to control or influence the change itself, they are in a position to control how they can respond to such changes. This may include learning and practicing change management processes and learning new skills which are likely to increase their retention rates after an M&A deal (Whittle, 2002). Employees should take cognizance of the fact that the merging of any two companies results in cultural and leadership change (Whittle, 2002). Thus, employees must be ready and prepared for change in their job description, business direction, or reporting relationship (Whittle, 2002).

5.3.3 Implication for Policy Makers in Africa

Policy makers in Africa such as governments and labour institutions such as trade unions as well as direct and indirect stakeholders of an M&A deal must be prepared to play active roles in an M&A. For instance, are trade unions and governments prepared to protect the interest of employees in the aftermath of an M&A deal? Are trade unions, governments among other stakeholders prepared to place restrictions such as a rigorous criterion in laying off workers which may end up discouraging companies from reducing the size of employment after an M&A deal? Could there be thresholds in the number of workers who could be laid off as stipulated in a contractual agreement? Will these policy makers compel companies to provide other employment opportunities for affected employees in a stipulated contractual agreement? Whether these questions would be addressed by policy makers remains to be seen. However, these are relevant questions in the context of protecting the interest of workers and to constrain companies in using M&A to lay off workers. The argument is that workers are innocent and should not be used as ‘scapegoats’ in an M&A deal. Companies should rather focus on fundamental factors responsible for shareholder wealth maximization such as capital budgeting, cash flow and working capital decisions.

5.4 Recommendations for Future Research

Following the ever-increasing number of M&A deals in Africa and their impact on macroeconomic indicators, the subject merits attention. In addition to the current study, the impact of M&A on employees in Africa can be analyzed in several other ways. The following suggestions may be considered for future researchers: the effect of M&A

on leadership exodus, cultural clash as a result of M&A and post-merger integrating strategies in an M&A deal. A mixed method approach could also prove useful in providing an in-depth analysis of how workers are affected in the aftermath of an M&A deal.

In a mixed method approach, a qualitative methodology could focus on examining the performance of several workers during both pre- and post-merger phases over a two or three-year period. This study treats the impact of the various types of M&A on employment as one. It would seem reasonable that the different types of M&A could have different impact on employment. Thus, future researchers can investigate how the various types of M&As affects employment in Africa.

Admittedly, the conclusions drawn from this study vary from some of the literature reviewed. As indicated, this may be due to the differences in methodological approaches. Nonetheless, future researchers can propose different methodologies on this subject. Though this may lead to disparity in results, it provides different perspectives on an important economic issue which often enriches the literature on the subject.

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Appendix I**List of African Countries with M&A values from 1990 to 2010**

Algeria
Botswana
Egypt
Ghana
Mauritius
Morocco
Nigeria
South Africa
Sudan
Tanzania
Tunisia
Uganda
Zambia
Zimbabwe