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The measurement of post-acquisition performance in RSA using economic value added (EVA)

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THE MEASUREMENT OF POST-ACQUISITION PERFORMANCE IN RSA USING ECONOMIC VALUE ADDED (EVA)

A research paper submitted by

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May 2013

DECLARATION

I, Amos Makhele, hereby declare that the work presented herein is genuine work done originally by me and has not been published or submitted elsewhere for the requirement of a Master in Management of Finance and Investment degree at the Wits business school (WBS). Any literature, data, or works done by others and cited within this report has been given due acknowledgement and listed in the reference section. I further declare that I was given authorization by a panel from the research committee of the WBS to carry out this research.

Signed:

May 2013

ABSTRACT

This study re-examines post-acquisition performance of acquiring firms in South Africa using Economic Value Add (EVA). Investigation of the 336 acquisitions occurring during 2000 to 2011 reveals that acquiring firms experience significantly deteriorating EVA after the completion of acquisitions. Further, this study evaluates the performance of other traditional accounting measures including Earning per share (EPS), Return on capital (ROC), Return of Assets (ROA) and Return on Equity (ROE) post acquisition. The results suggest that acquiring firms tend to experience slightly improved performance after completion of the acquisitions when using traditional accounting measures. But the improved operating performance is wiped out by capital costs of the large premiums paid to the target firm, creating no real economic gains to the acquiring firm's shareholders

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CHAPTER ONE: INTRODUCTION

1.1 Introduction

This chapter formally introduces the topic by providing the research problem, research questions and research objectives of the study. Section 1.2 presents the context of the study. Section 1.3 presents research problem. Section 1.4 presents research objectives. Section 1.5 identifies the gap in the literature. Section 1.6 and 1.7 present significance of the study and the structure of the report respectively.

1.2 Context of the Study

The aggregate gains from acquisitions and the distribution thereof continue to attract the interest of finance researchers. Acquisitions allow firms to achieve greater market power, to overcome barriers to entry, to enter new markets quickly, and to acquire new knowledge and recourses. However, acquisitions also imply additional costs ofto? acquiring firms, such as takeover premium of 20-40 percent, on average (Eckbo & Langohr, 1989; Jarrell, Brickley, & Netter, 1988), and the costs of integrating the acquired firms into the acquiring organizations.

Despite overwhelming evidence of share price gains to target shareholders, most acquiring firms fail to realize positive gains. A number of studies find that shareholders of acquiring firms earn, on average zero abnormal return at the time of mergers and acquisitions (M&A) announcement, although there is enormous variation in these return (Fuller, Netter, and Stegemoller, 2002).

Although acquiring firms are not winners, most studies (Yook, 2004) agree that acquisitions on average increase the combined equity value of the target and acquiring firms, suggesting that acquisitions create a shareholder value. The positive overall wealth gains are attributed to the financial market's anticipation of post acquisition improved performance. Most studies on mergers and acquisitions have been carried out in developed countries but there is limited research on developing markets such as South Africa. This study is aimed at testing the performance of mergers and acquisitions in South African context.

The majority of studies (Smith and Ward, 2007) in this area focus on the short-term effects of acquisitions on the share price performance of the acquiring firm (pre-acquisition impact), whilst very few study the long-term effects (post-acquisition impact).

In South Africa the Competition Commission is responsible for approving firm's mergers or the acquisition. The Competition Commission is a statutory body constituted in terms of the Competition Act, No 89 of 1998 by the Government of South Africa and is empowered to investigate, control and evaluate restrictive business practices, abuse of dominant positions

and mergers in order to achieve equity and efficiency in the South African economy. The competition commission only does pre-investigations (state what the objective of this pre investigation is). After the merger and acquisitions have been approved there are no studies or investigations to test if the firms still hold the promise they made before merger or acquisition applications. As a result a more rigorous analysis is required to establish the post-merger or post-acquisition performance in South Africa.

One of the most extensively researched areas in finance has been whether mergers create value for shareholders of the target and bidder firms. Majorities of researchers (e.g) suggest that bidders lose during (after?) acquisition process.. However, there is little evidence that M&A have benefited shareholders of acquiring companies, on an average, as shown by the research studies of Loughran and Vijh (1997), Agrawal et al (1992), Sudarsanam and Mahate (2003) and Higson and Elliot (1998) to name a few.

The combined equity value of the bidding and target firms is argued to increase as a result of the acquisition. This is because, if management pursues policies of shareholder wealth enhancement then shareholders should not suffer wealth decreases as a result of their company acquiring other companies. However, empirical evidence generally demonstrates that bidder firms normally underperform after the merger, while shareholders of target companies make significant gains from takeovers. It is not clear whether these gains are due to transfer of wealth from shareholders of bidding company or possibly synergistic benefits. If there are gains arising out of synergy, then announcement period equity value increases should continue to be reflected in subsequent corporate operating performance, as posited by capital market studies. But this is generally not the case.

Furthermore, Healy et al (1992) explained that equity value gains (to who) could be due to capital market inefficiencies, arising from the creation of an overvalued security. They argued that capital market studies have not been able to identify whether equity gains are due to real economic gains or market inefficiency. Sudarsanam and Mahate (2003) believe that a clear conclusion in US and UK studies is that shareholders of target firms receive significant wealth gains while returns to the bidders at the time of bid announcement were ambiguous. They cite the examples of Gregory (1997) and Higson & Elliot (1998) where the returns to acquirers were a small positive, zero returns or negative returns. Another aspect is the length of the period covered in the study of performance. While some empirical research (e.g.) on mergers focuses on daily stock returns surrounding the announcement dates, other studies look into the long run performance of acquiring firms after mergers.

1.3 Research Problem

When firms' executive teams play the acquisition game, they pay an up-front price that virtually always includes a substantial premium. In most cases, premium is justified by stating that it is based on the acquirer's expectations of making improvements in the target firm's future performance and exploiting other synergies between the two firms. Only when performance gains above stand-alone expectations are large enough (in present value terms) to recapture the premium can an acquisition begin to create value for the shareholders of the acquiring company.

There are different methods used to determine where the actual synergies are from the post-acquisition. The two common methods are traditional accounting methods and benchmarking methods. How appropriate and significant are these methods?

Traditional accounting methods are highly tied to the subjective opinion of the accountant (i.e., FIFO vs LIFO, depreciation methodology), and this appears to be especially important in the analysis of profitability. As a consequence, managers can easily manipulate accounting performance measures (Dyl, 1989; Gomez-Mejía and Balkin, 1992; Hunt, 1985; Jensen & Murphy, 1990; Verrecchia, 1986). These facts imply that accounting measures used for years by shareholders to control and guide their investment decisions are quite inefficient. Benchmarking is the general name given to a range of techniques which involve comparisons between two examples of the same process so as to provide opportunities for learning. Benchmarking can, for example, be used to compare how different companies manage the product development processes; where one is faster than the other there are learning opportunities in trying to understand how they achieve this. The approach has been widely used — for example, in the field of quality management where it is used to drive the development of improvements in business performance, in software development and in developing continuous improvement systems.

The studies using accounting data to develop benchmark find mixed results. According to Fowler and Schmidt (1988) and Ravenscraft and Scherer (1987), acquiring firms' accounting rate of returns and profitability after acquisitions either deteriorate or show little improvement. Healy, Palepu, and Ruback (1992, 1997), however, report that the industry-adjusted cash flow returns after takeover vary depending upon whether the premium paid to target firms is taken into account in the analysis. If the cash flow returns are calculated assuming no premium was paid to target companies (i.e., the premium is excluded in the asset base), the median is 2.8 percent, indicating that takeovers improve profitability. If this adjustment is not made, the return becomes insignificant. Healy, Palepu, and Ruback (1992, 1997) interpret

these findings as evidence that acquisitions were zero net present value investments for acquiring firms. Cornett and Tehranian (1992) find that a sample of 30 mergers in the banking industry is associated with improved operating performance post-acquisition.

As eluded to above, the major problem in this research is the lack of consistency on financial measures used as benchmarks to assess post-acquisition performance as they fail to provide adequate guidance for long-term sustainability of mergers and acquisitions. EVA has been developed by the Stern Stewart Corporation as an overall measure of financial performance (Stewart, 1999). According to Ittner & Larcker (1998) traditional measures, conventional accounting principles of determining income, such as EPS (earnings per share) and ROI (return on investment), are the most common performance measures. However, they have been criticized for not taking into consideration the cost of capital and for being unduly influenced by external reporting rules. This study uses EVA to measure post acquisition performance. It is hypothesized that EVA is a more robust method of measuring post-acquisition performance compared to other traditional accounting measures.

1.4 Research Objectives

- To investigate whether mergers and acquisitions create value in South African economy
- To assess whether there is a differential performance among economic industries.
- To compare the operating financial performance of the acquiring/target? companies before and after acquisitions
- To investigate whether the size of payment paid to target firms is related to the subsequent economic value added during the post-acquisition period.

1.5 Gap in Literature

The three most used methodologies (in South African context) in long-term mergers and acquisition studies include the use of benchmark to determine cumulative abnormal returns (CAR) or average cumulative abnormal returns (ACAR) (Agrawal et al., 1992, the buy and hold abnormal returns (BHAR) (Barber and Lyon, 1997; Loughran and Vijh, 1997) and the calendar time abnormal returns (CTAR) methods (Mitchel and Stafford, 2000). However all these methodologies and others including accounting rate of returns and profitability measures, are criticized for their deficiencies in guiding shareholder wealth maximization. For example, post-acquisition accounting income can be distorted by the choice of financing, the accounting method (i.e., purchase versus pooling), and other accounting treatments. In general, cash payment financed by debt and purchase accounting lower post-acquisition accounting earnings.

By ignoring the cost of capital, these measures lack a formal mechanism for determining whether achieving such goals creates value for shareholders. Although a firm may earn a positive net income and high accounting rate of return, it may reduce shareholder wealth because earnings fall short of the required rate of returns that shareholders could earn by investing in other securities of comparable risk. In addition, the accounting measures may possibly be manipulated by firm management (Yook, 2004).

As an alternative measure that can overcome these deficiencies, economic value added (EVA), which is closely related to the net present value concept, has received growing attention in recent years in both business and academics. Also the most obvious question of utmost importance to investors, managers, and business researchers is weather there a single measure of corporate performance enabling investors to identify investment opportunities and motivate managers to make value-added business decision. Economic Value Added has been ac-claimed to be such a measure (Tully, 1993).

EVA is an estimate of a business's true economic profit for the year, and it differs sharply from accounting profit. EVA is essentially the residual income that remains after all costs have been recognized, including the opportunity cost of the equity capital employed. Accounting net income is overstated in an economic sense because the cost of equity capital is not deducted when net income is calculated. EVA overcomes this flaw in conventional accounting in measuring a firm's true operating performance. As the value of a company depends on the extent to which future cash flows exceed the cost of capital, theoretically EVA is the performance measure directly linked to the creation of shareholder wealth. EVA takes into account riskiness of investment which is factored into the cost of equity capital. The use of EVA as the financial performance measure links all decision making with a common focus which is how to maximize shareholder wealth.

1.6 Significance of the Study

Although the term EVA had appeared in the literature as early as 1989, it did not receive much attention until a September 20, 1993, article in Fortune magazine (Tully, 1993). One major reason for EVA's sudden popularity is that it appears to have an impressive army of corporate sponsors including such giants as AT&T and Coca-Cola. Executives from these companies have stated how very satisfied they are with EVA as their new measurement tool.

They have purportedly found the holy grail of corporate performance measures and now publicly share their high expectations for EVA to move their stocks up to a new high.

This study will benefit various parties mainly investors, managers, business researchers and government. Managers can use the result of this study to apply integrated performance measurement tools to obtain the best financial information for effective decision making as well as for other managerial needs. Stockholders, potential investors, and business partners will be assisted in their understanding of performance mergers and acquisitions and the way in which to determine the progress of the acquiring companies. The policy-makers will be assisted in determining how well the companies operate after awarding of mergers and acquisitions certificates. Finally, it would be helpful for academic studies on performance evaluation of mergers and acquisitions in South Africa.

1.7 Structure of the Thesis

This research is organized as follows. Chapter 2 presents literature review which consists mainly of previous empirical evidence. Chapter 3 deals with the description of the data and methodology adopted in this study. This is followed by Chapter 4, which presents the research results and their interpretations. Chapter 5 presents the discussions and conclusions of the study.

Chapter Summary

The analysis of value creation or destruction effects of mergers and acquisitions in the context South African economy is very important. Various sectors within the economy need more information on mergers and acquisitions to make well informed decisions. Policy-makers need well researched papers to help in making decisions regarding awarding or disallowing of the mergers and acquisitions. Investors or shareholders also need to make well informed decisions regarding the mergers and acquisitions of the companies' they already invest in or intend to invest in, in the future. The subsequent chapter (chapter 3) presents the literature review on different aspects of mergers and acquisitions.

CHAPTER TWO: LITERATURE REVIEW

2.1 Introduction

This chapter aims at providing a conceptual overview of literature on mergers and acquisitions. Section 2.2 presents the different types of mergers and acquisitions. Section 2.3 presents motivations for mergers and acquisitions activity. Section 2.4 presents glamour vs. value stocks and their performance post acquisition. Section 2.5 discusses the limitations of traditional financial measures of mergers and acquisitions and the section 2.6 presents modern financial measures that could be used to measure post-acquisition performance.

2.2 Types of Mergers and Acquisitions

Gaugham (2005) states that economic theory classifies mergers into three categories: Vertical, Horizontal and Conglomerate. 'Vertical merger' is defined as an integration of two firms, which operate within the same production line. Vertical mergers can be further classified into backward integration and forward integration. The former entails securing suppliers not only to enable a steady supply of inputs but also high quality maintenance and sound delivery schedules while the latter is the desire to use additional marketing services. 'Horizontal (lateral) mergers' is a fusion of two firms which operate within the same industry while 'conglomerate mergers' involves two firms, operating in different spectres, coming together. Cartwright and Cooper, (1992) define another type of merger known as concentric mergers' in which the organization acquired is in an unfamiliar but related field into which the acquiring company wishes to expand.

2.3 Motivation of Mergers and Acquisitions

Mergers and acquisitions have been researched extensively, especially in developed countries such as USA and UK. In the following sections the main theories behind the motivation for mergers and acquisitions is reviewed.

2.3.1 Synergy

Synergy is cited as one of the most popular explanations for mergers. Synergy happens when the value of two firms combined together is greater than the total value of each of the firms independently. The two common types of synergy as explained by Clemente and Greenspan (1998) are operating synergy and financial synergy. They state that operating synergy is comprised of two forms: revenue enhancements and cost reductions. The former was defined as a creation of a new or strengthened product or service that was formulated by the fusion of two distinct attributes of the merger partners and which generated immediate

and long-term revenue growth. Further they gave an example of achieving this form of synergy through sharing of marketing opportunities. In case of the latter, for instance, cost reducing synergy, they stated that it arises from economies of scale, which could be achieved in the fields of production, distribution and advertising or from economies of scope. Additionally, they believed that combination of complementary skills of both companies can create value. On the other hand, financial synergy as referred to by Gaugham (1999) is the possibility of lowering the cost of capital by combining two firms. He argued that it occurs when the combined cash flows were not perfectly correlated or the risk of bankruptcy was lowered.

Moreover, an increase in debt capacity could lead to the lowering of borrowing costs (Lewellen, 1971) as the new company might have better access to capital markets. An empirical study by Chatterjee (1986) showed that the resources behind financial synergy tend to create more value than the resources behind operational cost reducing synergy. Therefore, the key to the achievement of synergy realization are not the similarities across business but rather how the business activities complement each other in production, marketing and cultural terms.

2.3.2 Hubris management

Hubris is associated with overpayment and excess price. It is argued that unnecessary optimism from bidder management in evaluating the deal leads to excessive premiums being paid (Roll, 1986). In effect, the excess premium will remove the potential gains from the takeover.

Hubris is evident in a takeover deal when management believes that they are superior to the target's management and feel that this will be reflected in the post-acquisition performance of the company. Studies by Lang et al, (1989) and Servaes (1991) measure managerial and financial performance in bidders and targets and find that well-managed bidder firms benefit from large gains in tender offers. Servaes (1991) confirms similar results in the case of mergers. Holl and Kryazis (1997) also support the findings of Lang et al, (1989) and Servaes (1991) by showing that high-valued companies acquire lower-valued target companies with the aim of maximising corporate wealth. As expected, a hubris management will likely be part of a large and successful firm, similar to the high performance bidders studied by Lang et al, (1989), Servaes (1991) and Holl and Kryazis (1997).

Although these studies show positive gains for the bidder, the high premiums that arise from a hubris management will be detrimental to the overall value of the bid. Therefore, while past

studies have shown that high-valued and successful bidders benefit in tender offers and mergers, we hypothesise that returns to hubris bidders will be negative. Hubris bidders are identified by having high valuation ratios (book-to market and price-to-earnings) that are greater than the bidder's respective industry average and also where the premiums paid to the target shareholders are substantially more than the 40% premium usually seen in the average acquisition (Jensen, 1993). It is further hypothesized that hubris management overestimates the benefits from the acquisition and the completion of the deal will entail a very high premium. It is expected that this may diminish the possible gains from the acquisition and will be detrimental to bidder shareholders in the long-term post acquisition period.

2.3.3 Greater market power

In economics, market power is defined as the ability to raise price above the competitive price. Market power implies that a company has a greater chance of enjoying profits for a period of time as opposed to other competitors (Gaugham, 2005). Thus, mergers and acquisitions can enable companies to attain a larger market share and thereby increase the price of their products or services, relative to their cost. Hence, the desire and drive to gain more market power is considered as another objective for mergers. Increased market power is not only confined to the area of sales but can also be achieved in the area of purchases. However, anti-trust laws curb such intentions of companies in gaining power.

2.4 Glamour vs. acquirer

Some studies point out the reasons for under or over performance of acquirer firms. Rau and Vermaelen (1998) explain the performance of acquirers through three variables i.e. method of payment, type of acquisition i.e. merger or tender offer and the pre-bid valuation of the glamour or value acquirer. Glamour acquirers are those firms that are highly valued because of their past stock market performance. Their stocks are overvalued and receive premium ratings via high price/earnings ratio or market/book value ratio. In contrast, value firms are those with low ratios and whose stock is undervalued but may have the potential for subsequent value gains.

Glamour stocks have high growth and value stocks low growth and the high market valuation may be a reflection of the expected investment opportunities. Rau and Vermaelen (1998) put forward the extrapolation hypothesis wherein glamour acquirers with high market expectations due to recent high cash flow growth, earnings and high expected future performance may act out of overconfidence in making acquisitions. Therefore, glamour stocks enjoy significantly higher announcement period returns but much lower post

acquisition returns over a 3-year period than value acquirers who are more likely to be prudent and create value for shareholders. They posit that the market over extrapolates the past performance of glamour acquirer when it assesses the value of a merger but gradually reassesses the quality of the bidder when the results of the acquisitions become clear. Therefore, in the short run i.e. around the announcement of the acquisition, glamour bidders experience higher abnormal returns than value bidders. In the long run, this performance reverses as over a period of time the overvaluation is corrected and glamour stocks are rated down leading to significant value decline. Glamour firms observed a 3-year negative cumulative abnormal return (CAR) of –4% using a size and book to market adjustment method. Rau and Vermaelen (1998) also report a strong tendency for glamour acquirers to finance their acquisitions with their own stock, which they believe, explains why glamour bidders significantly underperform value bidders.

Sudarsanam and Mahate (2003) test the hypothesis whether companies with low price/earnings ratio and low market/book ratio experience larger post acquisition wealth gains than shareholders with higher ratios. They find a shift from underperformance of value acquirers in the announcement period to strongly superior performance in the post-acquisition period. This is consistent with stock market investors initially seeming to extrapolate the pre-bid performance of acquirers but starting to revise their judgments as they receive more information about the merits of the acquisitions. Thus, in the post-acquisition period, as further information about the progress of the acquisition, integration and operating performance changes become available, a reappraisal of the acquirer takes place. They find acquirers experience BHAR of –15% across the various benchmark models over a 3-year post acquisition period. Their results further point out that method of payment dominates glamour status as a determinant of long term post acquisition returns. In addition, they commented that their study further contributed to the existing documented evidence of significant value destruction in UK acquisitions, especially by acquirers making share exchange offers. In contrast, Abhyankar et al. (2005) observed that compared to earlier studies, their findings did not support the value / glamour effect in mergers.

2.5 Limitations of traditional financial measures

Performance measurement has become very topical in finance and there is an ever increasing interest in the subject. The increasing interest is driven by the increased rate of change in the business environment in both the private and public sectors. Neely et al.. (1999) state that this rapid change has led to a general dissatisfaction with traditional backward looking performance measurement systems. According to Atkinson et al. (1997)

performance measurement systems based primarily on financial data lack the focus needed for internal management and control. Moreover, as suggested by Kaplan and Norton (1996:2), they “worked well for the industrial era, but they are out of step with the skills and competencies companies are trying to master today”. Today, the perceived limitations of traditional accounting-based measures are numerous and well known.

Critics argue that stressing on financial indicators may lead to only promoting short-term thinking (Kennerley and Neely, 2000). The authors emphasize the need for an integrated performance measurement approach. They contend that the cost accounting approach focused on the minimization of variance rather than continuous improvement. Criticism of the traditional performance measurement approach and the limitations thereof can be summarized as follows (Creelman, 1998:9-12; Kaplan and Norton, 1996:38; Atkinson, *et al.* 1997:25): Traditional financial measures encourage local optimization, they tell companies how well they have performed in the past but provide few clues as to how the company will perform in the future, they do not provide adequate information for productivity measurement and improvement programs, they rre lagged performance indicators because they are historical in nature, by definition reporting on activities that have occurred already, they are the result of management action and organizational performance and not the cause of it, they are not externally focused, they say nothing about the factors such as customer service innovation, the percent of first-time quality, and employee development that actually help grow market share and profits and they lack the ability to guide the firm in its efforts to achieve manufacturing excellence.

In response to these criticisms, a large number of performance measurement systems (PMS) were proposed to broaden the performance measurement process. Furthermore, Ittner & Larcker (1998) state that many managers feel that traditional accounting-based measurement systems no longer adequately fulfil the need in developing strategic plans, evaluating the achievement of organizational objectives, and compensating managers.

Perceived inadequacies in traditional accounting-based performance measures have motivated a variety of performance measurement innovations ranging from ‘improved’ financial metrics such as ‘economic value’ measures to ‘balance scorecards’ of integrating financial with non-financial measures”.

2.6 Morden financial measures

The success of the firm depends on the competitive quality of its knowledge-based and in practice operational tools for planning, decision-making and monitoring. Developing new management accounting and decision tools are very current subjects both in business and consultation practice as well as in academic research. During the last few years several new techniques and concepts of financial performance measurement have become popular. These include activity based costing (ABC), the economic valued added (EVA), and market value added (MVA) variants (Stewart III, et al.1995: 32-46).

Activity based costing (ABC) attempts to create the big picture—crystal-clear, full, and accurate—by painting assorted little pictures. ABC identifies the relationship between a business activity and all the resources needed to conduct it by assigning costs to each of those resources, thus presenting the true total expense of the entire activity. It can account for so-called "soft" or indirect operating costs, and thus produce a more revealing, and perhaps startlingly different, financial picture than other accounting methodologies such as standard costing might offer. Used properly, ABC helps management better to distinguish operations that add value from those that do not, permitting more informed decisions about such matters as pricing, product mix, capital investments, and organizational change. In turn, ABC's advocates praise it as a more effective tool to identify and control costs, improve productivity, and increase profits.

Market Value Added (MVA) calculation shows the difference between the market value of a company and the capital contributed by investors (both bondholders and shareholders). In other words, it is the sum of all capital claims held against the company plus the market value of debt and equity. Calculated as: MVA = Company's Market Value – Invested Capital

2.6.1 EVA and its Advantages

EVA was developed by the Stern Stewart Corporation as an overall measure of financial performance (Stewart, 1999). According to Wallace (1998) and Ittner & Larcker(1998) traditional measures, such as EPS (earnings per share) and ROI (return on investment), are the most common performance measures. However, they have been criticized for not taking into consideration the cost of capital and for being unduly influenced by external reporting rules.

Stewart (1991) trademarked an economic value measure and named it (EVA®). It is defined as adjusted operating income minus a capital charge, and it assumes that manager's actions only add economic value when the resulting profits exceed the cost of capital. The

adjustments to profit and capital figures are meant to refine the basic economic profit (EP). Adjustments to the accounting data may be needed for activities such as spending on marketing, and research and development (R&D). These are added back to the balance sheet as an asset and amortized over a period expected to benefit from these expenditures (Arnold, 2002). Most studies to date, such as Ittner & Larcker (1998) and Stewart (1999) examined claims that EVA is a better predictor of stock returns than traditional accounting measures. In this regard, empirical research by O'Byrne (1996) concludes that EVA, unlike NOPAT (net operating profit after taxes) or other earnings measures like net income or earnings per share (EPS), is systematically linked to market value. It should provide a better predictor of market value than other measures of operating performance. Uyemura, Kantor & Pettit (1996) and Chen & Dodd (1997) also arrived at similar conclusions. Moreover, Chen & Dodd (1997) concluded that EVA measures provide relatively more information than the traditional measures of accounting in terms of stock return, but that EVA should not entirely replace the traditional measures since measures such as E/P, ROA and ROE have incremental value in monitoring firm performance. According to (Pettit, 1999:64; Hawawini, *et al.* 2003:5) EVA is a version of the residual income method that measures operating performance and provides a decision framework, performance measures, and incentives to motivate management to create value. The principal feature of this measure is that it reduces income by a change to the cost of capital that is employed to produce the income.

Chapter Summary

The literature shows that mergers and acquisitions will continue to play an integral part in business fraternity. It is of great importance to measure post-acquisition performance through the right tools in order to determine the sustainability of merger and acquisitions. But it is the effective use of this data by decision makers at all levels of the organizations that will aggressively improve the success of mergers and acquisitions. The following chapter (chapter 3) presents and discusses the methodology that is used in this research.

CHAPTER THREE: RESEARCH METHODOLOGY

3.1 Introduction

This chapter presents methodology used in this research as well as data required for the research and research design. Data and data sources are discussed in Section 3.2 and research design is presented in Section 3.3.

3.2 Data and data sources

This study considers all South African M&A deals that occurred between 2000 and 2011 and involving South African listed companies. The M&A and accounting information dataset are obtained from Bloomberg database. The selection criteria for the inclusion of the deals include the following: the deals were completed; the acquiring firm was not from the financial industry (due to lack of comparability of accounting variables with other industries); acquiring firms with multiple acquisitions during a period were considered and deals with all sizes of transaction value were considered. The final sample of 336 consists of mergers acquisitions transactions.

Healy, Palepu, and Ruback (1997) argue that advantages of using a sample of large acquisitions over a random sample include one, the dollar value of the selected takeovers accounted for a significant portion of the dollar value of all takeovers; two, if acquiring companies did gain economically from takeovers, the gains would most likely be detected if the target firm were large; three, it was unlikely that the sample acquirers would undertake equally large acquisitions prior or subsequent to the takeover, reducing any confusion in interpreting results. Returns are reported for up to eleven years post-takeover. Attrition amongst survivors means that there is a reducing sample the longer the holding period. As a result the research will also analyse large acquisitions separately and assess if they have differential impact.

3.3 Research design

EVA is used to assess the financial performance of acquiring companies eleven years after the deal was concluded. The methodology used to calculate EVA is discussed below.

3.3.1 Definition of Economic Value Add (EVA)

EVA is the invention of Stern Stewart & Co., a global consulting firm that launched EVA (Stewart, 1999). EVA is calculated as a company's "net operating profit after taxes" (NOPAT) minus a cost for the equity capital employed by the company. The cost of equity capital employed by a company is equal to the company's equity capital (reported on its balance

sheet) multiplied by a percentage return that the company's shareholders require on their investment. Expressed as a formula:

EVA = NOPAT – (Equity Capital * % Cost of Equity Capital) [**Equation 1**]

Where:

- *EVA = Economic Value Add*
- *NOPAT) = Operating Income * (1 - Tax Rate)*
- *Equity Capital = Capital raised from owners.*
- *% Cost of Equity Capital = the return rate that stockholders require for their investment in a company*

The use of equation 1 produces either a positive or negative EVA figure. A positive EVA reflects that the company is increasing its value to its shareholders, whereas a negative EVA reflects that it is diminishing its value to its shareholders.

EVA is based on the principle that, because a company's management employs equity capital to earn a profit it must pay for the use of this equity capital. The idea is that until a business returns a profit that is greater than its cost of capital, it operates at a loss. This means the enterprise still returns less to the economy than it devours in resources. Until then it does not create wealth instead it destroys it (Ehrbar 1998).

Including a cost for the use of equity capital sets EVA apart from more popular measures of company performance, such as return on assets (ROA), return on equity (ROE) and the efficiency ratio, which do not consider the cost of equity capital employed. As a result, these measures may suggest a company is performing well, when in fact it may be diminishing it's shareholders' value. Accordingly, in this research, performance of M&A using EVA is compared to performance using ROA and ROE.

3.3.2 Measuring of net operating profit after tax (NOPAT)

The first step in calculating EVA is to make adjustments to a company's net income in order to produce its NOPAT. These adjustments are necessary as the company's net income is calculated under generally accepted accounting principles (GAAP), which often distort the current economic realities of the company. The disparity between a company's GAAP net income and its current economic realities is largely attributable to the conservative bias that characterizes GAAP. Examples of this conservative bias include recognizing unrealized losses when they occur but delaying recognition of unrealized gains, stating assets at their

historic cost value rather than at their market value, and writing down long-lived assets when they are impaired, but not writing them up in response to their appreciation.

GAAP's conservative bias is for the benefit of the company's shareholders and creditors; however, it may produce financial statements that are not truly reflective of the company's performance. There are more than 120 potential adjustments that a company can make to its net income. However, most companies require no more than about ten adjustments to produce a sufficiently accurate EVA figure.

The general rules for deciding on what adjustments to make to a company's net income include: the materiality of the adjustments, the effect they will have on management's behavior, how easily they are understood and the degree to which they will impact the company's market value.

There are three basic steps in the process of finding NOPAT, there is no single correct method for arriving at a final number. The method an investor uses is a matter of how approximate or precise he or she wants to be. Some critics lament that economic profit requires 50-150 adjustments - but many users of economic profit agree that most of the answer is found after a dozen or even fewer adjustments. The stages of the process getting to NOPAT take three basic steps: Start with earnings before interest and taxes (EBIT). Make the key adjustments - these come in two flavors: Eliminating accounting distortions (convert accrual to cash) and reclassifying some expenses as investments (i.e. capitalizing them to the balance sheet). Finally, subtract cash operating taxes.

3.3.3 Measuring cost of equity capital

As indicated in section 3.2.1, the cost of equity capital employed by a company is equal to its equity capital multiplied by a percentage return that the company's shareholders require on their investment. The percentage return that a company's shareholders require on their investment is calculated under the assumption that they require both a return for just investing their money and a return that reflects the risk inherent in investing specifically into the company in question. Capital asset pricing model is used to measure the cost of equity.

% Return Required = Risk Free Rate + (Beta Coefficient * Market Risk Premium)
[**Equation** 2]

Where:

Percentage return required = the return that the company's shareholders require from the The investment

Risk free rate = interest rate that can be obtained by investing in an investment with no risk

Beta coefficient = is the level of risk inherent in investing in a specific company relative to investing in the overall stock market

Market risk = is the risk associated with investing in the stock market as a whole

3.3.4 Measuring equity capital

As indicated in equation 1, equity capital is Invested money that, in contrast to debt capital, is not repaid to the investors in the normal course of business. It represents the risk capital staked by the owners through purchase of a company's common stock (ordinary shares). The value of equity capital is computed by estimating the current market value of everything owned by the company from which the total of all liabilities is subtracted. On the balance sheet of the company, equity capital is listed as stockholders' equity or owners' equity. Also called equity financing or share capital.

3.3.5 Measuring EPS, ROA, ROC and ROE

Companies are adopting both modern and traditional accounting measures and indicators to measure their financial performance. Traditional accounting measures, such as Earnings Per Share (EPS), Return On Assets (ROA) and Return On Equity (ROE), and their effect on shareholder (market) value, have been discussed for long time (e.g., provide reference to show that they have been discussed over a long time). The performance of EVA is compared with the performance of traditional accounting measures to assess if there is any significant difference between them in terms of measuring post-acquisition performance.

Earnings per share (EPS) are the amount of earnings per each outstanding share of a company's stock. The measure is calculated as follows:

EPS = [Net Income] / [Average Common Shares]

The return on assets (ROA) percentage shows how profitable a company's assets are in generating revenue. The measure is calculated as follows:

ROA = [Net Income] / [Average Total Assets]

Return on capital (ROC) is a ratio used in finance, valuation, and accounting. The ratio is estimated by dividing the after-tax operating income (NOPAT) by the book value of invested capital. The measure is calculated as follows:

ROC = ([Net Operating Profit] – [Adjusted Taxes]) / [Invested Capital]

Return on equity (ROE) measures the rate of return on the ownership interest (shareholders' equity) of the common stock owners. The measure is calculated as follows:

ROE = [Net Income after Tax] / [Shareholder Equity]

3.3.5 Statistical measures

The statistical tools used are paired sample t-test to test the level of significance. To compare the EVA with traditional accounting methods, the Wilcoxon rank sum test is used. This will assist in finding whether the company may benefit significantly from adopting EVA in addition to traditional accounting measures.

Chapter Summary

In this chapter the data, the data source and the research design implemented in the study are described. All accounting information for acquiring companies will be obtained from Bloomberg database for all years under study.

CHAPTER FOUR: PRESENTATION OF RESULTS

4.1 Introduction

This chapter presents sample data descriptive analysis and empirical results. Sample characteristics are discussed in Section 4.2 and data results are presented in Section 4.3.

4.2 Sample characteristics

The premium paid to target firms based on the target firm's stock price 30 days before the public announcement of the deal ranges from 0.05 million to 31 billion. The average premium is 513 million. The sample consists of 336 acquisitions.

4.2.1 Distribution of sample by transactions and payment mode

Table 1 shows that fifty four percent of the mergers are cash transactions, 27 percent are financed by stock, 13 percent is combination of stock and cash and the remaining 5 percent are financed by combinations of cash and debt, debt and other securities. In short, the sellers prefer cash for their liquidity value, but forego the opportunity to share in any synergy gains that stock ownership would have provided. A debt payment is the worst case scenario for the sellers, who obtains neither liquidity nor appreciation value, as shown by low percentage value.

Table:1- Distribution of transactions by payment type

Payment Type	N	Total Value (mil.)	Total Value %
Cash	197	93,981.04	54.49%
Cash and Debt	3	13.44	0.01%
Cash and Stock	61	23,586.34	13.67%
Debt	1	48.00	0.03%
Stock	48	46,797.89	27.13%
Undisclosed	26	8,062.02	4.67%
Grand Total	**336**	**172,488.73**	**100.00%**

4.2.2 Distribution of sample by years and payment mode

Table 2 shows a different story which may be attributed by a deep recession of 2008-2009. It is clear that the use of cash, cash and stock and stock declined in this period. The South African GDP growth rate dropped to 1.8 percent in the last quarter of 2008, then plunged to -6.4 percent in the first quarter of 2009, and to -3.2 percent in the second 4th quarter. So the

country fell into a technical recession already at the end of the first quarter of 2009. Manufacturing output in the first quarter of 2009 declined by 6.8 per cent relative to the previous quarter, while mining production declined by 12.8 percent over the same period. Similar contractions are apparent in the retail and wholesale trade sales, with motor vehicle sales (domestic and export) in particular falling sharply. (SARB Quarterly Bulletin, various). Hence the acquirers were willing to pay less if the payment is in cash, since it needed to dip into their capital resources to obtain the funds, rendering them less able to deal with other issues that may require cash funding.

Table:2- Distribution of payments by years (real values)

	Cash		Cash and Stock		Stock	
Year	**N**	**Value (mil.)**	**N**	**Value (mil.)**	**N**	**Value (mil.)**
2000	20	3,755.80	9	1,912.97	4	7,757.78
2001	16	2,765.62	2	170.93	4	660.98
2002	14	3,477.97	4	3,394.98	4	2,107.85
2003	12	2,505.85	2	1,148.55	4	6,040.03
2004	13	4,397.10	3	5,286.06	7	15,049.00
2005	17	4,817.13	5	1,729.07	3	74.55
2006	22	40,470.97	3	2,662.16	4	108.89
2007	21	5,663.22	13	3,770.03	5	10,847.42
2008	21	13,276.39	11	1,814.58	4	2,632.59
2009	21	8,308.76	4	903.55	2	81.86
2010	10	1,804.11	3	117.30	5	494.49
2011	10	2,738.12	2	676.16	2	942.45
Grand Total	**197**	**93,981.04**	**61**	**23,586.34**	**48**	**46,797.89**

4.2.3 Distribution of sample by payment mode and industry

Table 3 shows the method of acquisition financing by industry. The mergers and acquisitions were in six industries: basic materials, consumer goods, financials, industrials, technology and telecommunications. Most industries seemed to have used more than 50% of cash as

mode of payment. However, basic materials, consumer goods and telecommunications do not use much of a mix of cash and debt. Basic materials are the highest in using stock mode, while industrial is the highest in both cash and stock and pure cash. All the industries used debt as mode of payment except industrials. Lewellen (1971) stated that an increase in debt capacity could lead to the lowering of borrowing costs as the new company might have better access to capital markets and this may be the reason why companies are reluctant to use debt as a method of financing.

Table:3- Distribution of payments by years

Payment Type	Basic Materials	Consumer Goods	Financials	Industrials	Technology	Telecoms
Cash	56.76%	64.94%	50.00%	61.94%	36.36%	62.50%
Cash and Debt	0.00%	0.00%	10.00%	0.75%	3.03%	0.00%
Cash and Stock	10.81%	11.69%	0.00%	23.13%	36.36%	12.50%
Debt	0.00%	0.00%	0.00%	0.75%	0.00%	0.00%
Stock	21.62%	12.99%	40.00%	7.46%	21.21%	12.50%
Undisclosed	10.81%	10.39%	0.00%	5.97%	3.03%	12.50%
Grand Total	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%

4.2.4 Distribution of sample by years, industry and number of acquirers

Table 4 shows that there are 336 completed acquisitions events over 2000-2011 period. The table also provides information on multiple acquirers. “Multiple Acquirers” refers to the acquiring firms that acquire more than one target in a calendar year. “Single Acquirers” acquire only one target in any calendar year. There is an increase in M&A deals between 2003 and 2007 but the deals decline post 2007 but with much larger individual deal sizes are observed post 2000. The decline in the number of deals post 2007 may be an indication that at this period, South Africa, as with the rest of the world experienced economic meltdown and recession and firms were reluctant to engage in mergers and acquisition activities. Most of the acquirers (231 out of 277 acquiring firms) are single acquirers, i.e. they are made only one completed deal in a calendar year. The rest of the firms made more than one acquisition in a given year. Most of the deals are in Industrials, followed by consumer goods and basic materials. The least deals are in telecommunications.

Table 4: Number of acquisitions over 2000-2011 and corresponding transaction value

PANEL A: Transactions by year

Year	# of Trans	# of Acquirer	# of Single Acquirer	# of Multiple Acquirer	Total Trans value(in R mil.)	Avg. Trans Value(in R mil)
2000	39	31	24	7	14,086.31	361.19
2001	26	21	17	4	5,158.01	198.39
2002	25	19	15	4	9,382.73	375.31
2003	22	18	15	3	9,939.76	451.81
2004	28	20	13	7	25,046.96	894.53
2005	30	27	24	3	7,494.68	249.82
2006	30	24	20	4	43,518.53	1,450.62
2007	41	33	31	2	24,071.39	587.11
2008	36	33	30	3	17,723.56	492.32
2009	27	21	16	5	9,294.17	344.23
2010	18	17	15	2	2,415.90	134.22
2011	14	13	11	2	4,356.73	311.20
Total	336	277	231	46	172,488.73	513.36

PANEL B: Transactions by industry

Industry	# of Trans	# of Acquirer	# of Single Acquirer	# of Multiple Acquirer	Total Trans value(in R mil.)	Avg. Trans Value(in R mil)
Basic Materials	74	56	40	16	59,397.58	802.67
Consumer Goods	77	67	59	8	36,771.04	477.55
Financials	10	9	8	1	636.51	63.65
Industrials	134	112	95	17	31,694.76	236.53
Technology	33	26	22	4	2,713.16	82.22
Telecommunications	8	7	7	0	41,275.68	5,159.46
Total	336	277	231	46	172,488.73	513.36

4.2.5 Distribution of sample by years and industry

Table 5 presents the number of percentage distribution of number of acquisitions over eleven years. As stated in section 4.2.4 South Africa has been hit by the global financial and economic crisis, though in ways not predicted or expected. While the crisis did not hit the banking sector in the same degree or as deeply as in the US and Europe. The industrials, consumer goods and basic materials appear also to have taken some knocks.

Table 5: Number of acquisitions by industries over 2000-2011

Year	Basic Materials	Consumer Goods	Financials	Industrials	Technology	Telecoms
2000	14.86%	16.88%	10.00%	6.72%	12.12%	12.50%
2001	5.41%	9.09%	0.00%	8.96%	9.09%	0.00%
2002	5.41%	10.39%	0.00%	8.21%	6.06%	0.00%
2003	10.81%	10.39%	0.00%	4.48%	0.00%	0.00%
2004	6.76%	5.19%	0.00%	9.70%	15.15%	12.50%
2005	9.46%	12.99%	20.00%	6.72%	3.03%	12.50%
2006	14.86%	6.49%	30.00%	4.48%	9.09%	25.00%
2007	9.46%	10.39%	30.00%	12.69%	15.15%	12.50%
2008	5.41%	5.19%	0.00%	17.16%	15.15%	0.00%
2009	5.41%	10.39%	0.00%	9.70%	3.03%	12.50%
2010	5.41%	1.30%	10.00%	6.72%	6.06%	12.50%
2011	6.76%	1.30%	0.00%	4.48%	6.06%	0.00%
Total	**100.00%**	**100.00%**	**100.00%**	**100.00%**	**100.00%**	**100.00%**

4.3 Do Mergers and Acquisitions create value for shareholders?

The thrust of this research is use EVA to assess the performance of the firm post-merger and acquisition. The EVA results are then compared with the results from traditional accounting measures.

4.3.1 Acquirers/target firm's performance pre-acquisition

Sample size increased with years before acquisition as shown in table 6. Mean is higher than median all through while standard deviation is so high, according to central tendency theory, the mean is not a good representative or measure of the central value hence median is preferred. The trends of all measures seem to increase before acquisition. In comparison with table 7, the performance deteriorated after the acquisition mainly for EVA, it doesn't show any significant difference. EPS is the most that shows a good significant difference, however ROC, ROE, and ROA show a good significance for the first year and there after insignificant.

Table 6: Descriptive statistics of pre-acquisition of EVA and all measures

		-11	-10	-9	-8	-7	-6	-5	-4	-3	-2	-1	All
N		6	13	23	42	65	79	94	103	106	115	120	766
EVA	Mean	67.85	60.06	94.61	60.84	68.79	83.6	88.7	126.29	155.83	149.21	173.1	123.1
	Median	31.48	0	0	0	0	0	0.48	3.76	11.22	12.33	28.98	2.95
	S.D	93.61	217.83	194.66	177.2	314.96	500.78	541.16	706.9	700	769.51	938.28	657.99
EPS	Mean	0.6	0.29	0.4	1.21	0.93	0.31	1.07	1.28	1.16	1.64	1.86	1.2
	Median	0.43	0	0.01	0.03	0.02	0.03	0.1	0.24	0.33	0.41	0.47	0.23
	S.D	0.64	1.56	3.01	4.19	2.04	4.55	2.49	3.24	2.42	3.3	3.71	3.26
ROA	Mean	4.21	1.86	6.78	3.92	-3.15	2.26	3.26	1.15	5.79	6.89	6.98	3.93
	Median	2.05	3.13	1.81	3.52	0.75	2.8	4.38	5.43	6.36	7.54	8.56	5.69
	S.D	6.25	17.02	14.19	19.86	26.7	19.24	19.65	39.55	13.45	11.28	12.06	21.44
ROC	Mean	7.3	10.91	11.47	15.87	10.55	13.3	13	15.62	15.97	22.78	25.37	17.02
	Median	6.62	8.06	6.38	9.05	1.01	9.12	12.34	12.75	13.1	16.18	18.7	13.12
	S.D	6.91	12.26	13.45	22.2	17.05	16.82	16.29	17.2	15.93	53.64	52.23	32.73
ROE	Mean	5.69	-0.13	10.65	12.98	0.85	8.22	12.03	16.89	14.81	18.96	19.53	13.7
	Median	4.13	9.19	2.73	4.13	1.77	4.02	10.83	14.78	13.34	17.61	22	13.43
	S.D	8.66	46.74	21.25	52.99	44.58	41.26	25.71	24.73	25.33	25.15	24.73	31.76

4.3.2 Results for significance change of EVA between pre and post-acquisition

Based on the evidence in table 7 below, in 2 to 3 years after the acquisition all measures show insignificant performance except EPS.

Table 7 - One-Sample Test for significant difference of EVA from pre-acquisition EVA and all measures

PERIOD		1	2	3	4	5	6	7	8	9	10	11
Df		133	127	120	110	91	68	54	39	30	27	18
EVA Test Value = 2.953	Mean	135	46.4	-70	-177.7	-160.4	-272.8	1.67	249.2	-219.1	-647.8	-920.8
	Median	20.35	9.16	4.2	0	1.57	11.82	2.29	0.84	5.3	-55.79	-34.24
	t	1.26	0.4	-0.59	-0.91	-0.9	-1.01	-0.01	0.96	-0.72	-1.94	-1.69
	Sig. (2-tailed)	0.21	0.69	0.56	0.36	0.37	0.32	1	0.34	0.48	0.06	0.11
EPS Test Value = 0.234	Mean	2.49	2.47	2.97	2.91	1.62	2.91	3.04	4.44	4.71	1.85	3.87
	Median	0.46	0.48	0.4	0.62	0.35	0.53	0.84	0.61	0.89	0.6	0.55
	t	4.23	4.4	3.11	3.26	1.88	3.99	2.82	2.62	2.23	2.44	1.7
	Sig. (2-tailed)	0	0	0	0	0.06	0	0.01	0.01	0.03	0.02	0.11
ROA Test Value = 5.689	Mean	10.12	3.54	3.66	4.65	3.73	2.35	9.23	7.82	7.88	3.3	2.98
	Median	9.26	8.09	6.84	6.15	4.95	5.51	5.56	5.83	6.41	4.83	7.23
	t	2.98	-0.66	-0.69	-0.68	-0.99	-1.47	1.69	1.03	1.05	-0.68	-0.84
	Sig. (2-tailed)	0	0.51	0.49	0.5	0.32	0.15	0.1	0.31	0.3	0.5	0.41
ROC Test Value = 13.123	Mean	22.34	21.1	19.29	18.93	16.68	17.96	20.4	18.01	10.73	12.09	16.99
	Median	18.09	16.8	15.83	15.28	12.55	13.75	15.4	15.35	15.44	13.65	15.77
	t	3.7	3.65	2.52	2.78	1.58	2.56	2.33	0.74	-0.36	-0.13	0.99
	Sig. (2-tailed)	0	0	0.01	0.01	0.12	0.01	0.02	0.47	0.72	0.9	0.34
ROE Test Value = 13.430	Mean	20.16	15.4	12.48	9	3.6	7.64	17.7	13.89	18.61	3.72	12.45
	Median	20.38	18.3	16.24	13.1	11.65	14.47	15.2	16.6	16.73	10.43	14.7
	t	3.56	0.77	-0.3	-1.22	-2.79	-1.22	0.81	0.07	0.97	-1.13	-0.3
	Sig. (2-tailed)	0	0.44	0.76	0.22	0.01	0.23	0.42	0.94	0.34	0.27	0.77

4.4 To assess whether there is different performance among economic industries

The second objective of this study is to assess whether there is a differential performance among economic industries.

4.4.1 Acquirer/target firm pre-acquisition performance by industries

Table 8 shows that the industrials and consumer goods industries increased on yearly basis towards acquisitions, while the other industries showed a decline.

Table 8: Descriptive statistics of pre-acquisition of Industries

Period		-11	-10	-9	-8	-7	-6	-5	-4	-3	-2	-1	Overall
Basic	Mean	99.75	138.14	77.48	34.72	154.06	286.12	383.39	412.72	185.95	86.74	149.86	213.72
	Median	62.95	0	0	0	0	5.27	30.6	47.14	17.41	0.63	22.58	5.27
	S. D	122.37	303.91	156.67	74.12	496.93	893.61	793.6	710.86	665.56	737.54	1099.7	753.51
consumer	Mean	0	0	28.28	42.74	-33.84	-63.78	37.63	112.9	165.99	201.8	167.28	102.55
	Median	0	0	0	0	0	0	0	16.51	27.65	39.1	76.7	7.42
	S. D	0	0	93.41	100.76	309.59	440.56	148.08	179.73	336.21	351.72	251.43	288.83
Financials	Mean		-278.6	4	-132.3	-38.29	-5.57	79.94	94.26	119.11	120.88	104.98	61.47
	Median		-278.6	4	-132.3	-38.29	-0.88	0	0	-0.27	-0.48	-0.19	-0.23
	S. D					51.85	148.17	137.41	148.26	179.25	203.7	242.92	172.16
Industrials	Mean	35.95	83.69	164.75	101.14	99.44	69.44	1.58	1.75	71.56	46.4	33.72	52.09
	Median	0	0	0.69	0	0	0	0.59	3.61	12.37	14.52	28.02	3.52
	S. D	62.27	169.26	258.41	233.46	291.91	362.2	605.38	881.83	327.57	645.76	741.57	566.57
Technology	Mean		4.67	-2.17	2.25	1.61	5.19	3.28	0.47	1.99	5.39	15.34	4.8
	Median		4.67	-2.17	2	0	1.65	0.6	0.58	0.58	0	5.9	0.81
	S. D			2.7	3.04	4.69	7.12	10.43	15.36	23.82	18.71	20.65	15.71
Telecomm	Mean					0	414.44	138.33	614.8	1690.3	2385.2	3394.1	1597.91
	Median					0	414.44	138.33	0	134.1	1206	4021	1617.6
	S. D						586.1	195.62	1617.6	3731.7	3001.4	2941.8	1200.37

4.4.2 Results for significance change in EVA from pre-acquisition EVA by industry

Table 9 reports the significance change of post acquisition by industries. The industrials, basic materials and consumers' goods show insignificant change.

Table 9 - One-Sample Test for significant difference of EVA from pre-acquisition EVA by industry

PERIOD		1.00	2.00	3.00	4.00	5.00	6.00	7.00	8.00	9.00	10.00	11.00
Basic Material	T	0.11	(0.19)	(1.09)	(1.68)	(0.97)	(1.01)	0.50	1.85	(0.58)	(2.23)	(1.86)
T.V = 3.52	Sig. (2-tailed)	0.92	0.85	0.29	0.11	0.34	0.33	0.63	0.10	0.58	0.08	0.14
	Mean	46.71	(68.80)	(473.00)	(988.90)	(517.10)	(901.80)	412.00	1559.30	(659.00)	(2704.00)	(3303.00)
	Median	6.16	(2.09)	(42.10)	(33.30)	(89.69)	(44.30)	(103.00)	163.19	34.40	(1974.00)	(1804.00)
Consumer Goods	T	2.35	0.45	0.17	(1.16)	(0.41)	(0.42)	(0.43)	(0.67)	(0.66)	(0.38)	(0.78)
T.V = 7.42	Sig. (2-tailed)	0.02	0.65	0.87	0.26	0.69	0.68	0.67	0.52	0.52	0.71	0.46
	Mean	117.00	55.30	34.20	(346.80)	(46.73)	(185.30)	(38.00)	(99.02)	(133.70)	(49.50)	(75.80)
	Median	41.15	53.50	15.10	13.91	33.08	20.29	19.20	(4.72)	(5.20)	(2.36)	(1.02)
Financials	T	0.37	0.29	0.80	0.27	0.59	0.89	(0.65)				
T.V = -0.23	Sig. (2-tailed)	0.73	0.78	0.47	0.80	0.59	0.44	0.63				
	Mean	45.66	45.30	211.00	89.40	214.94	391.72	(13.70)	6.68	0.76	(20.10)	(34.20)
	Median	(6.62)	(1.28)	3.87	5.05	(37.53)	(23.16)	(13.70)	6.68	0.76	(20.10)	(34.20)
Industrials	T	0.20	(0.43)	(0.30)	(0.89)	(1.07)	(0.91)	(2.24)	(1.82)	0.23	(2.38)	(0.58)
T.V = 3.52	Sig. (2-tailed)	0.84	0.67	0.76	0.38	0.29	0.38	0.04	0.11	0.83	0.06	0.60
	Mean	21.16	(57.80)	(38.80)	(128.30)	(318.50)	(81.95)	(344.00)	(487.29)	49.17	(93.30)	(56.30)
	Median	26.86	12.50	11.30	(7.33)	(0.24)	(32.55)	(35.90)	(36.81)	14.28	(72.90)	(7.34)
Technology	T	2.51	1.85	0.95	0.47	0.23	1.43	1.91	1.75	0.09	(1.30)	
T.V = 0.81	Sig. (2-tailed)	0.03	0.09	0.36	0.65	0.82	0.21	0.15	0.18	0.93	0.32	
	Mean	20.47	20.30	8.29	6.72	6.55	30.09	31.30	23.81	2.55	(47.80)	(116.00)
	Median	9.65	6.41	5.17	1.38	8.36	25.92	30.70	17.08	8.47	(40.50)	(116.00)
Telecomm	T			(0.32)	1.29	0.09	(50.78)					
T.V = 1617.6	Sig. (2-tailed)			0.78	0.33	0.93	0.01					
	Mean			755.00	5852.00	1875.70	304.03	215.00	(204.11)			
	Median			156.00	5802.00	157.80	304.03	215.00	(204.11)			

4.5 Do Size for payment paid to target firms related to the subsequent economic value added during the post-acquisition period?

The table 10 present whether the size of payment matters to value creation. We split pre-acquisition value into two equal halves using median or 50th percentile

Table 10 – Pre and post acquisition averages of all measures

		PreACQAVG	PostACQAVG
Valid		670	670
Mean		26.867	-24.704
Median		3.907	6.468
Std. Deviation		200.13	525.928
Minimum		-2530.338	-6458.324
Maximum		3038.934	5039.905
Percentiles	50	3.907	6.468

4.5.1 Pre-acquisition descriptive statistics by size of payment

Table 11 presents the split between small acquisitions and big acquisitions based on the payment values. Big acquisitions have shown a steady increase on yearly basis.

Table 11 – Descriptive statistics of big and small deals

		Small Acquisitions Pre-acquisition value				Big Acquisitions Pre-acquisition value		
Yrs	N	Mean	Median	Std. Deviation	N	Mean	Median	Std. Deviation
-11	7	0.183	0.313	1.247	23	22.286	5.186	52.844
-10	23	-12.921	0	58.991	42	29.67	4.927	113.917
-9	47	-0.815	0	9.274	68	42.474	7.875	118.328
-8	87	-6.298	0	24.184	123	36.834	10.622	106.848
-7	144	-4.496	0	24.714	182	31.783	7.87	192.195
-6	182	-8.74	0	88.872	214	47.579	12.544	295.886
-5	209	-21.913	0	224.419	262	60.172	13.951	254.494
-4	227	-15.51	0	367.377	289	70.082	18.179	272.975
-3	235	-0.495	0	93.445	296	70.234	16.716	416.617
-2	256	-16.308	0	193.195	319	85.002	17.726	429.63
-1	265	-26.411	0.198	331.116	335	102.15	22.389	477.898
	Overall	-13.384	0	222.49		66.553	15.798	343.409

4.5.2 Results for significance change in post-acquisition value creation for small and big payments paid

Table 12 also shows that neither the big or small payments made, the performance after the acquisition doesn't depicts a significant difference.

Table 12 – Descriptive statistics of big and small deals

PERIOD		1.00	2.00	3.00	4.00	5.00	6.00	7.00	8.00	9.00	10.00	11.00
Small Acq	Df	334.00	327.00	311.00	287.00	247.00	190.00	152.00	125.00	107.00	99.00	78.00
T.V = 0000	T	0.02	(0.19)	(0.38)	(0.69)	(0.61)	0.20	1.25	1.30	(0.25)	(1.52)	(1.35)
	Sig. (2-tailed)	0.98	0.85	0.70	0.49	0.54	0.84	0.21	0.19	0.80	0.13	0.18
	Mean	0.55	(5.26)	(11.50)	(18.13)	(26.90)	5.79	75.12	90.60	(20.67)	(134.22)	(182.10)
BigAcq	Df	334.00	311.00	292.00	266.00	211.00	152.00	120.00	72.00	45.00	38.00	15.00
T.V=15.798	T	1.73	0.80	(0.41)	(0.72)	(0.72)	(1.13)	(1.89)	(0.23)	(1.27)	(1.19)	(1.38)
	Sig. (2-tailed)	0.08	0.42	0.68	0.47	0.47	0.26	0.06	0.82	0.21	0.24	0.19
	Mean	75.51	41.99	(0.74)	(39.56)	(27.00)	(114.55)	(71.30)	0.95	(66.11)	(89.26)	(151.30)

From section 4.3 up to 4.5 these are the results answering the main objects of this study.

4.6 Empirical results

Panels A and B in Table 13 present the performance of M&A's post- acquisition using EVA, EPS, ROA, ROC and ROE eleven years (years -11 to -1) pre-acquisition and eleven years (years 1 to 11) post-acquisition. The final line in each panel is the aggregate median for the associated eleven-year period. To calculate the aggregate pre-acquisition median for all measures, this study first computes the median for all measures for each firm for years -11 to -1, following Healy, Palepu, and Ruback (1992). The aggregate post-acquisition are calculated the same way.

The Wilcoxon rank sum test is used to determine whether the differences between the aggregate median EVA, EPS, ROA, ROC and ROE during the eleven years preceding the acquisition and each of the eleven years following the acquisition are statistically significant. Panel C in Table 13 shows the results. Table 14 shows the significance difference post acquisitions. One year after the acquisition all performance measures except EVA are significant and eleven years is only ROE which is most significant with the significance level of 0.05. These results suggest that overall operating performance significantly deteriorates after acquisition.

Table 13- EPS,EVA,ROA,ROC and ROE for Acquiring Firms

Yr Relative to Completion	N	EVA	EPS	ROA	ROC	ROE
PANEL A: Pre-Acquisition Performance						
-11	30	67.8525	0.5984	4.209	7.2977	5.6853
-10	65	60.059	0.2941	1.8627	10.9145	-0.1338
-9	115	94.6083	0.3981	6.7757	11.4723	10.6541
-8	210	60.8444	1.2079	3.9196	15.8729	12.9823
-7	326	68.7902	0.9323	-3.1535	10.5537	0.85
-6	396	83.5979	0.3084	2.2641	13.2973	8.2242
-5	471	88.6953	1.0724	3.2591	12.9969	12.0253
-4	516	126.2914	1.2788	1.1533	15.6201	16.8848
-3	531	155.8323	1.1616	5.787	15.9695	14.8072
-2	575	149.2138	1.6351	6.8899	22.7813	18.9643
-1	600	173.1007	1.8633	6.9786	25.3724	19.5292
MEDIAN		2.9527	0.2335	5.6891	13.1226	13.42955
PANEL B: Post-Acquisition Performance						
1	670	135.0251	2.494	10.1149	22.3425	20.1601
2	640	46.3873	2.4677	3.5427	21.0468	15.4234
3	605	-69.9495	2.971	3.663	19.288	12.4785
4	555	-177.687	2.9118	4.6509	18.9258	8.9953
5	460	-160.377	1.6207	3.7323	16.6821	3.6001
6	344	-272.7711	2.9074	2.3473	17.9564	7.6372
7	274	1.6705	3.0364	9.2306	20.4193	17.682
8	199	249.1906	4.4431	7.8218	18.013	13.8888
9	154	-219.1052	4.7089	7.8778	10.7275	18.6078
10	139	-647.7719	1.8488	3.2967	12.0886	3.715
11	95	-920.7884	3.8696	2.9819	16.9934	12.4468
MEDIAN		3.7119	0.5369	6.7446	15.6859	16.1511
PANEL C: Difference Between Pre & Post Acquisition EPS,EVA,ROA,ROC,ROE						
From (-11, -1) to 1		131.313	1.957**	3.370**	6.657**	4.009**
From (-11, -1) to 2		42.675	1.931**	-3.202	5.361**	-0.728
From (-11, -1) to 3		-73.661	2.434**	-3.082	3.602	-3.673**
From (-11, -1) to 4		-181.399	2.375**	-2.094	3.24	-7.156**
From (-11, -1) to 5		-164.089	1.084	-3.012	0.996	-12.551**
From (-11, -1) to 6		-276.483	2.370**	-4.397*	2.27	-8.514**
From (-11, -1) to 7		-2.041	2.500**	2.486	4.733	1.531
From (-11, -1) to 8		245.479	3.906**	1.077	2.327	-2.262**
From (-11, -1) to 9		-222.817	4.172**	1.133	-4.958	2.457**
From (-11, -1) to 10		-651.484**	1.312**	-3.448	-3.597	-12.436**
From (-11, -1) to 11		-924.5	3.333	-3.763	1.308	-3.704**

**** and * denote significance at the 0.05 and 0.10 levels respectively, based on a two-tailed test**

Yr Relative to Completion	N	EVA	EPS	ROA	ROC	ROE

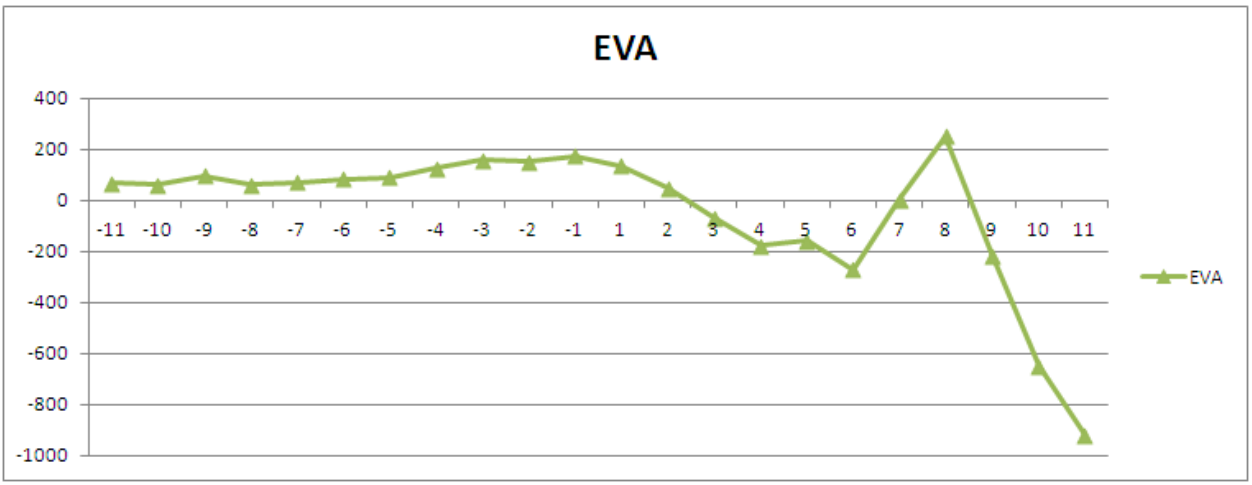
Table 14- Significant and Insignificant performances post acquisition by years

Yrs	EVA	EPS	ROA	ROC	ROE
1	insig	sig	sig	sig	sig
2	insig	sig	insig	sig	insig
3	insig	sig	insig	insig	sig
4	insig	sig	insig	insig	sig
5	insig	insig	insig	insig	sig
6	insig	sig	sig	insig	insig
7	insig	sig	insig	insig	sig
8	insig	sig	insig	insig	sig
9	insig	sig	insig	insig	sig
10	sig	sig	insig	insig	sig
11	insig	insig	insig	insig	sig

Where sig = significant difference Insig = insignificant difference

This observed change may be attributable to the downturn in South African economy and the subsequent recession experienced during this period. EVA during the eight years after the acquisition shows the steep decline, exhibiting a considerable deterioration in operating performance of EVA for each of the 11 years examined as shown on the subsequent figure 1 below

Figure 1



Inspection of the results presented in Panel B indicates that all performance measures have subsequently increased before the acquisition and hence in this instance, the acquisition positively contributed towards performance of the holding company. Immediately after 2 years of acquisition all measures apparently declines substantially as shown on the graph below (figure 2)

Figure 2

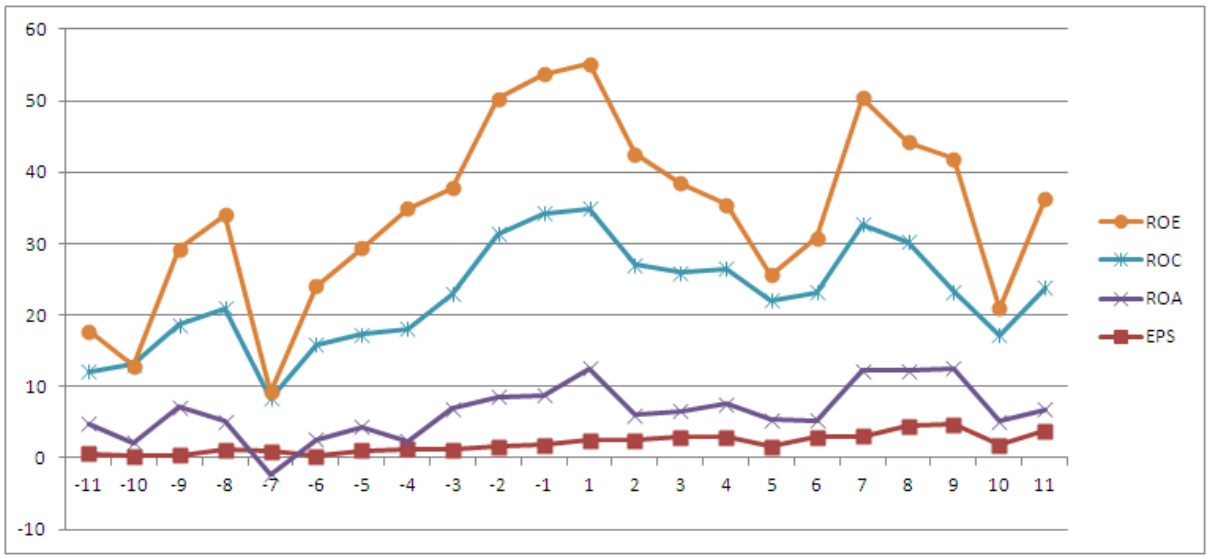


Figure 2 presents the panel B table 13 above. Prior to acquisition all the measure show the steady growth. Immediately after the acquisitions, they all show a decline pattern which is consistent with previous studies of Chatterjee and Meeks (1996).

CHAPTER FIVE: DISCUSSION AND CONCLUSION

5.1 Introduction

This chapter outlines the conclusions and recommendations of this study. The chapter is structured as follows: Section 5.2 presents a discussion on original hypotheses and summary of findings. Section 5.3 provides the conclusions derived from this study and the insight into further studies.

5.2 Discussion of findings

This study contributes to the literature post-acquisition performance of acquiring firms using EVA in South African M&A environment. Whereas examining long-term stock returns has been a popularly used approach, the use of accounting and financial data is appropriate to measure directly post-acquisition operating performance gains. Traditional accounting rate of returns and profitability measures are criticized for their deficiencies in measuring performance, particularly because they ignore capital costs and have the potential for manipulation of accounting data. A new performance measure, EVA, overcomes these flaws existing in conventional financial metrics as a true performance measure.

5.2.1 Mergers and acquisitions value creation in South Africa

Based on the results of EVA in sections 4.3 and 4.5. The results indicate that in the post-takeover period, there is insignificant improvement in the merging firms performance measures, compared to the pre-takeover period. This is consistent with the results of Chatterjee and Meeks (1996), for acquisitions that took place during 1984-90. It is also consistent with the operating performance results of Higson (1998), Manson, Powell, Stark and Thomas (2000), and Carline, Linn, and Yadav (2002). Even though it doesn't last for more than 2 years and shows a decline trend. Other traditional financial measures show a decline trend but quickly pick up with time.

5.2.2 Differential performance among economic industries

From section 4.2.5, between 2006 and 2008 the industrials increased and immediately followed a decreasing trend thereafter. Which also proves the deep recession on industrialized economies? Other industries also show the same trend. Post-acquisition period the industrials, basic materials and consumers' goods show a significant change. Seemly the deep recession has a negative impact on South African economy.

5.2.3 Size of payment relationship with subsequent EVA during the post –acquisition period

In sum, the acquiring firm experiences considerably deteriorating operating performance after acquisition, but the poor performance is generally not different from their industry counterparts. These findings imply that the sharp decline in EVA in the post-acquisition period is mostly accounted for by industry effects. This implication might support the view that industries experiencing relatively poor operating performance are likely to be the object of takeover activity. Finding that acquisitions strongly cluster by industry, Mitchell and Mulherin (1996) argue that acquisitions might occur as a reaction to unexpected shocks to industry structure. A change in economic conditions associated with regulatory or technological shocks might necessitate restructuring activities. Acquisition can restore efficiency through consolidation in industries that are plagued by low investment opportunities, excess capacity, deteriorating cash flows, and increasing capital costs.

5.3 Conclusion

After examining 336 acquisitions occurring during 2000 to 2011, this study finds that acquiring firms experience significantly deteriorating operating performance after the completion of acquisitions as shown by EVA. The post-acquisition aggregate median EVA for this sample increased 3.71 million compared to the pre-acquisition period. These results suggest that acquiring firms tend to experience slightly improved performance relative to their industry counterparts after completion of the acquisition. But the improved operating performance is negated by the capital costs of the large premiums paid to the target firm, creating no real economic gains to the acquiring firm's shareholders. These findings indicate that acquisitions are zero net present value investments for acquiring firms. Yook (2004) has reported that firms experience significantly deteriorating operating performance after the acquisitions.

The financial performance of the companies' improved after merger in terms of EPS, ROA, ROC and ROE. But most of the results are not statistically significant. The not so significant improvement in financial performance put a question mark on the motive behind mergers. Also, the financial performance may not be the only parameter for M&A success. Rau & Vermaelen (1998) also indicated that firms in mergers and tender offers under-perform their benchmarks by statistically significant 4% in the three years after the acquisitions. The future scope of study is to compare the performance of companies taking the firms involved in merger activities and the firms without the merger deals. Study can also be extended to the cases of acquisitions.

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