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THE IMPACT OF MERGERS AND ACQUISITIONS ON THE CORPORATE PERFORMANCE OF SOUTH AFRICAN LISTED COMPANIES IN THE FINANCIAL SECTOR

by

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MINOR DISSERTATION
Submitted in partial fulfilment of the requirements for the degree

MAGISTER COMMERCII

in

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FACULTY OF ECONOMIC AND FINANCIAL SCIENCES

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UNIVERSITY OF JOHANNESBURG

SUPERVISOR: Prof NJ Smith

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Abstract

Mergers and acquisitions (M&A) is a thoroughly researched area in finance. However, some basic concerns still remain unresolved such as the measurements of corporate performance post M&A (Agrawal, Jaffe & Mandelker, 1992:1605. In this study, the impact of M&A on corporate performance of South African listed companies in the financial sector was investigated. The primary goal was to determine if corporate performance post M&A does actually change.

Share price studies have had little success in relating the gains in equity value of M&A to improvements in subsequent corporate performance (Healy, Palepu & Ruback, 1992:136). Therefore, an accounting study approach was applied to determine if corporate performance changes post M&A. The accounting study utilised a quantitative approach that follows a quasi-experimental research design. This involved statistical testing to examine the accounting data of companies before (pre-testing) and after (post-testing) the M&A, to determine a change in corporate performance. Accounting ratios were applied as performance indicators and consisted of: inflation adjusted return on assets, inflation adjusted return on equity, operating profit margin and return on capital employed.

None of the performance indicators indicated a statistical significant change between pre and post M&A performance. It was concluded that the sample of financial companies that engaged in M&A did not experience a significant change in corporate performance within their first financial year post M&A.

Key words

Mergers, acquisitions, corporate performance, economies of scale, event study, accounting study
Declaration of original work

I, Josia Musvasva, declare that this minor dissertation is my own unaided work. Any assistance that I have received has been duly acknowledged in the dissertation. It is submitted in partial fulfilment of the requirements for the degree of Master of Commerce at the University of Johannesburg. It has not been submitted before for any degree or examination at this or any other university.

__________________________________________  ________________________
Josia Musvasva                                      Date
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I thank Dave Thayser and the South African partnership of Ernst & Young for making their database on mergers and acquisitions available for this research. Finally, I would like to extend my gratitude to my friends and colleagues who supported and encouraged me to finish my minor dissertation.
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Chapter 1

Contextualisation

1.1 Background of mergers and acquisitions

Research has shown that mergers and acquisitions (M&A) tend to be caused by a combination of economic, regulatory and technology shocks (Mitchell & Mulherin, 1996; cited in Gaughan, 2007:29). Substantial wealth exchanges hands during M&A waves, thus the economic importance of this cannot be ignored (Toxvaerd, 2007:2).

M&A date as far back as the turn of the 19th century, occurring in six distinct cycles/waves.

The first M&A wave started at the heel of the depression that ended in 1896, and existed during a period of economic and capital buoyancy (Bruner, 2004:72). These M&A were characterised by horizontal M&A in an effort to form monopolies and take advantage of monopoly rent and economies of scale with the manufacturing industry being the main sector affected (Bruner, 2004:72; Gaughan, 2007:36).

The second wave coincided with a rise in stock market prices and volumes that began following the recession of 1923 and ended during the stock market crash in 1929 (Bruner, 2004:74). This wave was mainly characterised by vertical M&A in a bid to form oligopolies and in the process, several industries were consolidated (Gaughan, 2007:36).

The third wave coincided with a strong economy and a bull market in the 1960s (Bruner, 2004:74). Diversification or conglomerates M&A characterised the third wave and it was common for relatively small companies to target larger companies for acquisition (Gaughan, 2007:40).

The fourth wave was a period of low interest rates and rising stock prices in general (Bruner, 2004:74). Small and medium companies dominated the fourth M&A wave.
The unique characteristic of the fourth wave was the significant role of hostile takeovers (Gaughan, 2007:53).

The fifth M&A wave coincided with low interest rates and rising stock prices, with various financial indices reaching new highs (Bruner, 2004:74; Gaughan 2007:59).

The sixth wave saw the introduction of globalisation, as established corporate companies emphasised the need to create a multi-national reach and private equity increased (Matthews, 2011:¶1).

In Figure 1.1 it is illustrated how global M&A volumes decreased during the last quarter of 2007. The general decline in M&A volume and value illustrated in Figure 1.1 indicates the end of the sixth M&A wave.

![Figure 1.1: Global M&A activity](source)(Elliott, 2010:17)

In South Africa M&A is not a new concept, but what has changed the M&A are the drivers behind it (Hourquebie, 2009:8). Traditional M&A drivers, such as private equity, formation of joint ventures, management buyouts, strategic alliance, cross-border investment, corporate restructuring, outward investment and inward investment still play a significant role in South Africa’s M&A activity.
The most notable new M&A driver in South Africa is the government’s Black Economic Empowerment (BEE) policy (Hourquebie, 2009:8). The BBE transactions contribution to the total M&A transaction values between 1991 and 2008 is indicated in Figure 1.2 and an increase in BEE related M&A relative to non-BEE M&A is illustrated.

Figure 1.2: South Africa M&A activity (ZAR billions)

Source: (Hourquebie, 2009:9)

1.2 Regulation of mergers and acquisitions in South Africa

In South Africa all M&A are regulated by the Competition Act (Act 89 of 1998), which was developed to provide for the establishment of the Competition Commission. 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 M&A in order to achieve equity and efficiency in the South African economy (www.compcom.co.za).

The purpose of M&A control in South Africa is to ensure that M&A transactions do not lead to substantial decrease in competition to the detriment of consumers and the public interest (Ramburuth & Manoim, 2009:13). M&A can be prohibited by the Competition Commission if the commission is convinced that the M&A will result in restrictive business practices.
The Competition Commission has an M&A division, which investigates and analyses the likely effects of the notified M&A and evaluates if the M&A is likely to substantially prevent or lessen competition in any of the markets in which the parties compete (www.compcom.co.za).

1.3 Mergers and acquisitions in South Africa

South Africa’s economy is made up of many sectors including wholesale, retail, property, manufacturing, transport, storage, information technology, telecoms, finance, mining and construction. The manufacturing sector has consistently been the important driver of M&A activity, with an average of 26% of M&A notifications over the last ten years (Figure 1.2). Property transactions followed, and they account for an average of approximately 20% of the M&A in the past six years. The wholesale and retail trade sectors are third, with 14% of the M&A transactions. This is followed by the finance sector, and then the mining and construction sector (Ramburuth & Manoim, 2009:21).

This study focuses on the M&A in the financial sector because this was the largest sector as measured by its nominal value added (21.1%) in the fourth quarter of 2009 (www.statssa.gov.za).

Each economic sector has its own unique characteristic that impacts and influences outcome of its operations. Narrowing down the study to the financial sector provided results that are accurate and economic sector specific.
1.4 Problem statement

Although M&A is a well-researched concept in finance, some basic concerns still remain unresolved, for instance, the measurements of corporate performance post M&A (Agrawal, Jaffe & Mandelker, 1992:1605).

Share price studies of M&A indicate that acquiring companies generally break even, and that the combined equity value of the acquiring companies and target company increases as a result of M&A (Bruner, 2004:36–46). The increases in equity values could however be attributed to unmeasured sources of real economic gains, such as synergy (Healy, Palepu & Ruback, 1992:136).

Research has had little success in relating the gains in equity value of M&A to improvements in subsequent corporate performance (Healy et al., 1992:136).

The problem is that share price performance studies are unable to determine whether M&A create significant corporate performance change post M&A.
To resolve the criticism of share price performance studies, this study applied an accounting study to determine pre and post M&A corporate performance.

The post M&A accounting performance represents real economic benefits generated by the M&A, whereas the M&A announcement returns represent the investors’ expectation of M&A benefits (Kumar & Rajib, 2007:122).

The accounting study applies post M&A accounting data to determine changes in corporate performance that result from M&A (Healy et al., 1992:136).

1.5 Goal of the study
It is claimed that after an M&A takes place there will be changes in corporate performance (Kumar & Bansal, 2008:1531). The primary goal of this study was to determine if corporate performance post M&A, as measured by selected accounting ratios, does actually change.

1.6 Research questions
This study considered accounting ratios as an alternative to share price, to determine pre and post M&A corporate performance and the primary research question was whether corporate performance changes post M&A.

To support the primary research question of this study the following supporting questions were investigated:

- What changes occur in inflation adjusted return on assets post M&A?
- What changes occur in inflation adjusted return on equity post M&A?
- What changes occur in operating profit margin post M&A?
- What changes occur in return on capital employed post M&A?
- Are the changes in inflation adjusted return on assets, inflation adjusted return on equity, operating profit margin and return on capital employed post M&A statistically significant?
1.7 Research design

This study was based on a quantitative approach and followed a quasi-experimental research design utilising an accounting study approach. The accounting study applied to a one group pre-test post-test design to measure the M&A effects. This involved examining the accounting data for companies before (pre-test) and after (post-test) the M&A, to determine a change in corporate performance (Bruner, 2004:34; Pautler, 2001:8).

The research design of this study was similar to the study design followed by Cornett and Tehranian (1992:211) and Kumar and Bansal (2008:1535), which assessed changes in corporate performance associated with M&A by evaluating changes in economic performance using pre and post M&A accounting data.

1.8 Data analysis

This study focussed on M&A in the financial sector in South Africa and applied accounting information to determine changes in corporate performance.

The accounting study compared the pre and post M&A corporate performances to determine if corporate performances changes post M&A. The proxy for corporate performance was accounting ratios as was applied by Cornett and Tehranian (1992:211), Kumar and Bansal (2008:1535), Vanitha and Selvam (2007:11) and Pawaskar (2001:21) in their study of M&A.

The accounting ratios consist of inflation adjusted return on assets, inflation adjusted return on equity, operating profit margin and return on capital employed.

A hypothesis test was performed on whether there is change in each accounting ratio pre and post M&A. The null and alternative hypotheses are expressed as:

Null hypothesis \( (H_0) \) = There is no change between pre and post M&A on the accounting ratio.

Alternative hypothesis \( (H_1) \) = There is change between pre and post M&A on the accounting ratio.
1.9 Delimitations and limitations of the study

The scope of the research was restricted to public limited, South African companies, in the financial sector, listed on the JSE Ltd.

These companies are regulated by the same laws prescribed in the Companies Act and it was possible to draw conclusions on similar terms as the regulator requirements are similar.

M&A between 1 January 2003 and 31 December 2009 was included in this study, which commenced in 2010 and the sample period was selected to include M&A up to the sixth wave of 2009 (Martynova & Renneboog, 2005:10). Studying M&A activities within the same wave made it possible to draw more concrete conclusions as the M&A experienced similar conditions.

Only M&A of related business was included in the study. Any other M&A between financial companies and non-financial companies were not included.

Only one year post M&A accounting ratios was analysed to determine post M&A corporate performance. A longer period would have included additional criteria and effects, which could have been far from and or independent of the M&A process (Miron & Patel, 2008:44).

After applying the delimitation on the study population the resulting sample consisted of 22 M&A.

As with other studies, this research had limitations. The research method did not completely control other factors that might have initiated a change in corporate performance, unrelated to the M&A (Bruner, 2004:32). To have isolated the impact of the M&A to only one year after the M&A may have limited a true assessment of post M&A corporate performance.

The research was limited to the financial sector in South Africa, which limited the general application of the results to other sectors of the economy.

Qualitative variables e.g. management teams, resolving culture concerns and communication, were not addressed as these are highly subjective and measuring these variables might not have produced accurate results (Kelly, Cook & Spitzer, 1999:2).
1.10 Definition of key terms
For the purpose of this study the key terms and concepts were defined as:

(a) Mergers and acquisitions: occur when one or more companies directly or indirectly acquire or establish direct or indirect control over the whole or part of the company or another company (The South African Competition Act, 1998:s12).

(b) Corporate performance: Corporate performance for the purpose of this research was identified by four accounting ratios namely: inflation adjusted return on assets, inflation adjusted return on equity, operating profit margin and return on capital employed. A favourable movement in these accounting ratios will result in an increase in corporate performance and an unfavourable movement in these indicators will result in a decrease in corporate performance.

(c) Synergy: A concept that describes the systemic process whereby business units of diverse, complex organisation will generate greater value through working as one system than working as separate companies (Benecke, Schurink & Roodt, 2007:9).

(d) Economies of scale: is defined as production advantages derived from increase market and company size because large companies can often select more efficient production techniques than a small scale company can (McConnell & Brue, 1996:387).

(e) Event study: A quantitative method that examines the effect of the stock market's reactions to the events, in this case M&A (Pautler, 2001:8).

(f) Accounting study: A quantitative method that is applied to examine M&A corporate performance by examining the accounting data of companies before and after M&A (Bruner, 2004:34).

1.11 Assumptions
The study was based on the following assumptions:

- The primary reason why companies engage in M&A is to increase corporate performance.
• Financial statements are prepared by applying the general acceptable accounting principles (GAAP). GAAP are standards or guides that attempt to remove bias and create objectivity and consistency in financial accounting information.

• Ratios applied have been accurately calculated.

1.12 Significance of the study
The major contribution of the study will be to add to the knowledge of the impact M&A have on corporate performance. It will also assist investors to make more informed decisions when investing in companies that are about to engage in M&A. Additionally, this study will form a foundation for further research on M&A.

1.13 Summary
In this chapter the context of this research was elaborated upon. It included the background of M&A, the problem statement, purpose of the study research questions, research methodology, delineations and limitations, definition of terms and concepts and underlying assumptions.
## 1.14 Chapter outline

### Table 1.1: Summary of chapter outline

<table>
<thead>
<tr>
<th>CHAPTER</th>
<th>CONTENT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chapter 1: Contextualisation</td>
<td>In this chapter the context of this research was elaborated upon. It included the background of M&amp;A, the problem statement, purpose of the study, research questions, research methodology, delineations and limitations, definition of terms and concepts and underlying assumptions.</td>
</tr>
<tr>
<td>Chapter 3: Research methodology</td>
<td>This chapter consists of the research design, methodology, research instruments applied, the data collected, data analysis techniques, limitations of methodology and ethical considerations.</td>
</tr>
<tr>
<td>Chapter 4: Data analysis and interpretation</td>
<td>In this chapter, data are analysed and interpreted.</td>
</tr>
<tr>
<td>Chapter 5: Conclusions and recommendations</td>
<td>This chapter concludes the study by drawing conclusions and making recommendations. Limitations of the study are also addressed.</td>
</tr>
</tbody>
</table>

Source: (Own deduction)

Table 1.1 summarises the delineation of the study.
Chapter 2

Review of mergers and acquisitions

2.1 Introduction

In the previous chapter the research was contextualised, in this chapter relevant literature pertaining to mergers and acquisitions (M&A) is reviewed.

Firstly, the various definitions of M&A are cited. A brief definition of the types of M&A namely horizontal, vertical, conglomerate and congeneric follows. The motivation for M&A is highlighted, and thereafter the synergy, hubris and agency problem will be discussed. Literature on post M&A evaluations relevant to the research question is reviewed with particular emphasis on accounting studies in developed and developing countries. Lastly a summary of the chapter follows.

2.2 Definition of mergers and acquisitions

Mergers occur when two or more companies are combined and the resulting companies maintain the identity of the acquiring companies (Gitman, 2009:762; Weston, Chung & Siu, 1990:9). The companies that combine should roughly be of equal size for the transaction to be classified as a merger (Lumby & Jones, 1999:553).

Many studies often use the terms “mergers” and “acquisitions” interchangeably (Ma, Pagan & Chu, 2009:237). The distinction between M&A may not really matter, since the net result is often the same: two companies (or more) that had separate ownership is now operating under the same roof, usually to obtain some strategic or financial objective (Sherman & Hart, 2006:12).

The South African Competition Act (1998:s3) states that an “acquisition” as defined in terms of section 1 of the Maintenance and Promotion of Competition Act, 1979 (Act No. 86 of 1979), must be regarded as a reference to a “merger” in terms of this
Act. This indicates that The Competition Act (1988) classifies acquisitions as mergers.

According to the South African Competition Act (1998:s12), a “merger” is the direct or indirect acquisition or direct or indirect establishment of control, by one or more persons over all 45 per cent significant interest in the whole or part of the business of a competitor, supplier, customer or other person, whether that control is achieved as a result of:

   (a) Purchase or lease of the shares, interest, or assets of that competitor, supplier, customer or other person;
   (b) Amalgamation or combination with that competitor, supplier, customer or other person; or
   (c) Any other means.

The definition of a merger as stated in the South African Competition Act (1998:s12), was adopted in this study. The words mergers and acquisitions were stated as synonyms as per The South African Competition Act (1998: Schedule 3 ‘Transitional Arrangements’:4c).

2.3 Types of mergers and acquisitions
To contextualise M&A for the purpose of this study a brief discussion of the different kinds of M&A are presented below.

There are four types of M&A namely horizontal, vertical, conglomerate and congeneric (Gitman, 2009:766; Green & Cromley, 1982:359). Different types of M&A were used to achieve different objectives or strategies.

2.3.1 Horizontal mergers and acquisitions
Horizontal M&A can be defined as the combinations of two companies in the same line of business, which could be competing in the same kind of business activity (Brealey, Myers & Allen, 2008:882; Gitman, 2009:766; Weston, et al., 1990:5).

Horizontal M&A take place to expand control of business activity in the same product line and lead to the simultaneous increase in market share and the elimination of some competition (Green & Cromley, 1982:539; Weston et al., 1990:5).
of a larger company may result in the benefit of economies of scale (Weston et al., 1990:5).

2.3.2 Vertical mergers and acquisitions

Vertical M&A can be defined as the expansion of a company's control into allied product lines (Brealey et al., 2008:883; Green & Cromley, 1982:539). Vertical M&A occur when a company acquires a company that is in different stages of production operations (Weston et al., 1990:5).

Vertical M&A are further classified into the following categories (Brealey et al., 2008:883):

- Backward – when the buyer expands back towards the source of raw materials.
- Forward – when the buyer expands forward into the direction of the ultimate consumer.

2.3.3 Conglomerate mergers and acquisitions

Conglomerate M&A occur between companies in unrelated lines of business (Brealey et al., 2008:883; Gitman, 2009:767). Conglomerate M&A, or diversification by M&A, are expansions by the acquiring companies into new and different product lines (Green & Cromley, 1982:359). One of the objectives of conglomerate M&A is to reduce business risks by the acquiring companies through diversification of its interests (Green & Cromley, 1982:359; Weston et al., 1990:6).

Conglomerate M&A can be classified into three types (Weston et al., 1990:5):

- Product – extension M&A broaden the product lines of companies. These are M&A between companies in related business activities.
- A geographic market – extension M&A involve two companies whose operations have been conducted in non-overlapping geographic areas.
- Pure conglomerate M&A – involve unrelated business activities, these would not qualify as either product-extension or market-extension M&A.
2.3.4 Congeneric mergers and acquisitions

Congeneric M&A can be defined as the acquiring of a company that is in the same industry but is neither in the same line of business nor a supplier or customer (Gitman, 2009:767).

2.4 Motives for mergers and acquisitions

The motive for M&A will influence the way in which M&A corporate performance are measured. Many motives for M&A have been formulated and Berkovitch and Narayanan (1993:347) have summarised these into three major categories as indicated in Table 2.1.

Table 2.1: Pattern of gains related to M&A motives

<table>
<thead>
<tr>
<th>Motive for M&amp;A</th>
<th>Total gains</th>
<th>Gains to target</th>
<th>Gains to acquirer</th>
</tr>
</thead>
<tbody>
<tr>
<td>Efficiency or synergy</td>
<td>Positive</td>
<td>Positive</td>
<td>Positive</td>
</tr>
<tr>
<td>Hubris</td>
<td>Zero</td>
<td>Positive</td>
<td>Negative</td>
</tr>
<tr>
<td>Agency</td>
<td>Negative</td>
<td>Positive</td>
<td>Negative</td>
</tr>
</tbody>
</table>

Source: (Weston, Chung & Siu, 1990:75)

The first column in Table 2.1 list the three major motives for M&A on the basis of whether value changes are positive, zero or negative. Value changes refer to movements in the price of the securities of companies as a result of M&A, divestitures, spin-offs, share repurchase, or other significant developments affecting the outlook for a company (Weston et al., 1990:75). These gains can be measured as percentage returns or in absolute amounts.

According to the data in Table 2.1 total gains are positive because of the efficiency or synergy motive and according to the hubris motive total gains are zero.

Indication is also that total gains can be negative as a result of agency problems. When agency factors motivate M&A, managers take actions in their own self-interest even to the detriment of the company (Weston et al., 1990:74).

Walter and Barney’s study in 1999 (cited in Kyei, 2008:11) identified 20 major motives for M&A. They grouped these motives into five broad classifications:

1. To obtain and exploit economies of scale
(2) A mechanism to deal with inter-dependencies or leverage synergies

(3) Expand current product lines and markets

(4) Enter into a new business

(5) Maximise and utilise a company’s financial capabilities

Ravenscraft (1987:19) states that although no consensus has been reached on the primary motivations, there does seem to be agreement on a list of potential motives for M&A, these include:

- Replacement of inefficient management
- Synergies such as economies of scale or scope
- Sharing of complementary resources
- Free cash flow
- Monopoly power
- Tax savings
- Undervalued assets
- Hubris
- Stock market inefficiencies such as myopic market behaviour, fads, or accounting tricks
- Empire building
- Pecuniary gains such as the breaking of implicit long-run labour contracts, transfer of wealth from bondholders, or pecuniary economies
- Diversification in order to reduce risk, smooth earnings, or other forms of portfolio management
- Divergent expectations due to economic disturbances
- Speculative motives such as asset plays
- Retirement of senior management

Lubatkin (1983:220) also developed a list of motives for M&A and grouped them into seven main theoretical areas, namely:

- Monopoly theory: gaining market power
- Efficiency theory: operating synergies, financial synergies and management synergies
• Valuation theory: bidder managers have better information about the target's financial performance than the stock market
• Empire building theory: planned and executed by managers who maximise their own utility instead of their shareholders value
• Process theory: managers have only limited information and base decisions on imperfect information
• Raider theory: managers creating wealth transfers from the stockholders of the companies they bid for
• Disturbance theory: M&A waves are caused by economic disturbances

Because the motives for M&A influence how successful M&A will be, the motives for M&A as specified by Berkovitch and Narayanan (1993:347) was explored further.

2.4.1 Synergy motive
Synergy is one of the most popular motives for M&A. In most instances the rationale of the acquirer is based on the promise of increasing shareholder wealth from a variety of sources, including greater synergy from the combined organisation (Tuch & O’Sullivan, 2007:141).

The theory of synergy is based on the Gestalt theory proposed by Wertheimer, Kohler and Kofka in the early 20th century who believed that “the whole is more than the sum of its parts” (Hergenhahn, 1976; cited in Benecke, Schurink & Roodt 2007:9).

2.4.1.1 Financial synergy
Financial synergy is created when the positive merged financial result is larger than the individual company’s financial influence. One company might have large internal cash flows and small investment opportunities, hence excess cash flows. While, another company with low internal fund generation capacity and large growth opportunities have a need for additional financing. The combination of the two may result in advantages from the lower costs of internal funds available (Weston et al., 1990:78).
2.4.1.2 Economies of scale

Economies of scale are production advantages derived from increases in market and company size (McConnel & Brue, 1996:387). The theory based on synergy assumes that economies of scale do exist in the industry and that prior to M&A, the companies will be operating at levels of activity that fall short of achieving the potential economies of scale (Weston et al., 1990:76).

The potential efficiency benefits from M&A include both operating and managerial efficiencies, while operational efficiencies may arise from economies of scale (Pautler, 2001:2).

2.4.2 Hubris motive

Another motive for M&A is based on the Hubris motive. According to the Hubris motive, managers exaggerated pride and self-confidence, resulting in overpayment for a target company in an M&A (Hayward & Hambrick, 1997:4). The central prediction of the Hubris motive is that the total combined M&A gains to target and bidding companies’ shareholders is not positive (Roll, 1986:206). The Hubris motive predicts that during M&A, the combined value of the target and bidding company should fall slightly. The value of the bidding company should decrease and the values of the target should increase (Roll, 1986:209). Roll (1986:209) argues that when bidding companies are infected by hubris – their excessive self-confidence (pride, arrogance) tends to make them pay too much for their target M&A.

2.4.3 Agency motive

The agency motive is based on the fact that managers are appointed to manage the interests of shareholders but do not always act in the shareholders’ best interests, resulting in the principal-agent problem (Brealey et al., 2008:969; Jensen & Meckling, 1976:309).

In terms of M&A the question is whether M&A occur to control the agency problem or as a manifestation of the agency problem.

2.4.3.1 Mergers and acquisitions and the control of the agency problem

M&A are in certain circumstances used to control the agency problem. In circumstances were internal controls systems are not effective to enforce managers
to abstain from non-value-maximising conduct, external means of coercion, such as M&A can then take place (Shleifer & Vishny, 1988:11).

Managers who resist bids are those who underperform and are more likely to be replaced following a successful bid and as a result, M&A are viewed as disciplinary, targeting companies where managers had failed to achieve shareholder objectives (Jensen, 1993:835; Manne, 1965:177).

2.4.3.2 Mergers and acquisitions as a manifestation of the agency problem

According to Weston, et al. (1990:81) M&A are a manifestation of agency problems rather than a solution. For instance, managers adopt strategies to expand the size of their empires (empire building) by undertaking M&A even at the cost of potential shareholder losses (Pangarkar, 2000:41; Ray & Warusawitharana, 2009:5). In some cases M&A are formed because it is fashionable to do so (Pangarkar, 2000:41).

From the arguments above it can be concluded that the agency motive to form M&A could have an important structural influence on post M&A corporate performance.

2.5 Corporate performance

Corporate performance is the overall performance of a company. The evaluation of corporate performance generally relies on some measure of output to a measure of input (Eilon, 1992:337).

Corporate performance can be measured by the share price of a company. The share price is a reflection of investors’ expectations about the company and its performance (Wilson, Chacko, Shrader & Mullen, 1992:495). It can also be measured by accounting ratios. Various combinations of accounting ratios have been applied to accounting studies as proxies of M&A corporate performance (Wang & Moini, 2012:4).

In comparison with share price as a measure of corporate performance, accounting measures have the following advantages (Wang & Moini, 2012:4):

- The measures reflect verifiable data
- It captures the realised returns
• More valuable information can be gained to assess M&A effect
• It is relatively simpler to implement compared to event studies
• The effects of multiple motives can be covered

A disadvantage of applying accounting measures for corporate performance is that it can be affected by accounting practices, such as the different methods applied to valuations of tangible and intangible capital (Demsetz & Villalonga, 2001:213). Furthermore, manipulations of data can separate reported income from true economic income (Ramakrishnan & Thakor, 1982:526).

2.6 Evaluation of post mergers and acquisitions corporate performance

In order to make meaningful comments on post M&A corporate performance, the qualities of the research methods and measures that were applied in the research were of critical importance (Bruner, 2004:33). To date, research offers four approaches to measure M&A corporate performance namely event studies, surveys of executives, clinical studies and accounting studies (Bruner, 2004:33).

2.6.1 Event studies

Event studies examine the abnormal returns to shareholders in the period close to the announcement of M&A (Bruner, 2004:33).

Abnormal returns are the raw return less a benchmark of what investors required that day. The benchmark is the return dictated by the capital asset pricing model or the return on a large market index, such as the S&P 500 (Bruner, 2004:33).

Event studies are regarded to be forward-looking on the assumption that share prices are the present value of expected future cash flows to shareholders (Bruner, 2004:33; Tuch & O’Sullivan, 2007:143).

The use of event study methodology requires an assumption of market efficiency, namely that share prices react in a timely and unbiased manner to new information and that the extent of the gains reflect the value of the company in forthcoming periods (Fama, 1970; cited in Tuch & O’Sullivan 2007:143).
Research has had little success in relating equity value gains to improvements in subsequent corporate performance. The reported equity value gains could be due to capital market inefficiencies, presenting an overvalued security (Shiller, 1989:64). Thus from a share price perspective, the anticipation of corporate performance change could be equivalent to market mispricing (Scherer, 1988; cited in Akben-Selcuk & Altiok-Yilmaz, 2011:2).

A problem with the event study approach is that changes in market valuations around the time of the M&A, could reflect not only the benefits of an efficiently operating market for corporate control, but also other factors such as undervaluation due to investors overlooking the stock or an overvaluation by those who acquire the company (Shiller, 1989:64).

If stock prices incorporate random valuation errors, then at any particular time a company can be undervalued or overvalued. In the former case, M&A may well occur and the rise in the share price of the target company does not reflect efficiency gains from the M&A, but merely a market correction (Scherer, 1988; cited in Akben-Selcuk & Altiok-Yilmaz, 2011:2).

In event studies the positive effects of the M&A are recognised by the stock markets, but it is difficult to identify the sources of the gains (Healy et al., 1992:136; Andrade, Mitchell & Stafford, 2001:114).

2.6.2 Surveys of executives

Surveys of executives are conducted by examining manager’s opinions on whether M&A created value. These studies present a sample of executives with a standardised questionnaire, and aggregate across the results to yield generalisations from the sample (Bruner, 2001:4).

The weaknesses of surveys of executive have been summarised by Bruner (2001:16) as follows:

- They present the perspectives of managers who may or may not be shareholders, and whose estimates of value creation may or may not be focused on economic value.
- The recall of historical results can be hazy or slanted to present results in the best light.
Surveys of executive have a low rate of participation of two to ten per cent, which makes them vulnerable to criticisms of generalisability.

2.6.3 Clinical studies
Clinical studies focus on one transaction or on a small sample of transactions to gain insight into M&A corporate performance. Information on corporate performance is gathered by in-depth interviews with executives and knowledgeable observers. This is inductive research and by focusing on the detail and factual background of M&A, the researchers often induce new insights (Bruner, 2001:4).

Clinical studies are only suited to hypothesis testing because the small number of observations limits the researcher’s ability to generalise from the cases (Bruner, 2001:16). Another weakness of clinical studies is that the research reports can be idiosyncratic making it difficult for the reader to abstract larger implications from one or several reports (Bruner, 2001:16).

2.6.4 Accounting studies
Accounting studies examine the reported financial results (i.e. accounting statements) of acquirers before and after M&A to determine how corporate performance changed (Bruner, 2004:33).

The focus of these studies ranges across net income, return on equity or assets, earnings per share and liquidity (Bruner, 2001:4; Andrade, et al., 2001:114; Akben-Selcuk & Altiok-Yilmaz, 2011:2).

2.6.4.1 Accounting studies on mergers and acquisitions corporate performance in developed countries
2.6.4.1.1 Accounting studies on mergers and acquisitions corporate performance in the USA and UK

A summary of accounting studies on M&A corporate performance in the USA and UK (Table 2.2) was compiled by Tuch and O’Sullivan (2007:150). The studies cover the period from 1964 to 1996.

Table 2.2: Evidence from USA and UK accounting studies on M&A corporate performance

<table>
<thead>
<tr>
<th>Author(s)</th>
<th>Period of study</th>
<th>Details of sample</th>
<th>Country</th>
<th>Time period</th>
<th>Main findings</th>
</tr>
</thead>
<tbody>
<tr>
<td>Meeks (1977)</td>
<td>1964–1972</td>
<td>233 mergers and acquisitions</td>
<td>UK</td>
<td>0 to +7 years</td>
<td>• Positive abnormal profits from the combined company in the merger year of 0.114% (significant).</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>• Abnormal profits of between −0.035 and −0.109% (all significant) over +1 to +5 years. Returns in years six and seven following the bid are insignificant.</td>
</tr>
<tr>
<td>Herman and Lowenstein (1988)</td>
<td>1975–1983</td>
<td>56 hostile tender offers</td>
<td>USA</td>
<td>−3 to +3 years</td>
<td>• Return on equity (ROE) of 14.8% during the merger year and 15.3% in year +1 for the 1975–1978 period. (statistical significance not reported).</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>• ROE for bids made between 1975 and 1978 varies between 11.4% and 16.9% (years −3 to +3) and between 4.3% and 15.6% for years 1981–1983 (statistical significance not reported).</td>
</tr>
<tr>
<td>Healy et al., (1997)</td>
<td>1979–1984</td>
<td>50 largest industrial takeovers</td>
<td>USA</td>
<td>−5 to +5 years</td>
<td>• Significant median industry-adjusted cash flow return on assets of 2.8% from 5 years when no bid premium is paid to target shareholders compared with an insignificant 2.1% when a premium is paid.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>• 73% of companies have positive, industry-adjusted cash flow returns assuming that there is no target premium five years after the bid.</td>
</tr>
<tr>
<td>Dickerson et al., (1997)</td>
<td>1948–1977</td>
<td>2941 acquisitions</td>
<td>UK</td>
<td>0 to +18 years</td>
<td>• Non-acquiring companies outperform acquirers by 2.4% per annum (significant).</td>
</tr>
<tr>
<td>Ghosh (2001)</td>
<td>1981–1995</td>
<td>315 cash, stock and mixed financed transactions</td>
<td>USA</td>
<td>−3 to +3 years</td>
<td>• Median difference between merged company and matched company sales growth insignificant for year −3 and year +3. For year +1 +0.08% (significant).</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>• Insignificant difference in median and mean operating expenses between merged and matched companies over year’s −3 to +3. Increase by 8% (significant) in year 1 following the bid.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>• No significant difference in the employee to sales relationship between the merging and matched companies over six years around the bid.</td>
</tr>
<tr>
<td>Linn and Switzer (2001)</td>
<td>1967–1987</td>
<td>413 mergers and acquisitions</td>
<td>USA</td>
<td>−5 to +5 years</td>
<td>• Average 1.81% industry-adjusted combined company cash flow return over the −5 to +5 year period (significant).</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>• 2.8% mean adjusted and 2.20% industry-adjusted increases in operating cash flow for the combined companies (both significant).</td>
</tr>
<tr>
<td>Lu (2004)</td>
<td>1978–1996</td>
<td>592 completed bids</td>
<td>USA</td>
<td>0 to +5 years</td>
<td>• Significant negative impact of the bid on acquiring company return on assets and return on equity for periods −12 to +12; −24 to +24; −36 to +36; −48 to +48; and −60 to +60 months.</td>
</tr>
<tr>
<td>Bild et al., (2005)</td>
<td>1985–1996</td>
<td>303 acquisitions</td>
<td>UK</td>
<td>0 to +4 years</td>
<td>• Abnormal ROE between −1.47% and 0.99% for years −3 to −1 and abnormal ROE of 17.24% to 21.50% for years 0 to +3. Raw ROE is control company adjusted.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>• No abnormal valuation differences between control companies and acquirers over years −1 to +4. Post-bid valuation difference of 5.62% for years +1 to +4. Post bid valuation difference of 5.62% for years +1 to +4. Fundamental company value is determined on the basis of the book value, forecast dividends and residual income.</td>
</tr>
</tbody>
</table>

Source: (Tuch & O’Sullivan, 2007:150)
Table 2.1 indicates that generally post M&A corporate performance for the specified period and country, was positive.

Although the results of Table 2.1 seem outdated, studies on M&A corporate performance by Healy et al. (1992:164), Switzer (1996:457) and Powell and Stark (2005:294) accept the results. These researchers report statistically significant improvements in the post M&A, industry-adjusted, operating cash flows for the M&A in their respective samples (Powell & Stark, 2005:294).

2.6.4.2 Accounting studies on mergers and acquisitions corporate performance in developing countries


2.6.4.2.1 Accounting studies on mergers and acquisitions corporate performance in South Africa

Studies on M&A in South Africa focused mainly on the pre-acquisition impacts of M&A on share price performance (event studies) (Kyei, 2008:77; Stevens; 2008:81; Wimberley & Negash, 2004:36).

One of a few accounting studies in South Africa on pre and post M&A corporate performance was conducted by Smit and Ward (2007:1). The overall conclusion by Smit and Ward (2007:12) was that on average M&A do not result in any significant improvement or deterioration in the corporate performance of the combined company. The study only considered cash flows and excluded other corporate performance indicators such as return on assets and return on capital and operating profit margin.

This study bridged these limitations by considering inflation adjusted return on assets, inflation adjusted return on equity, operating profit margin and return on capital employed post M&A as corporate performance indicators.
2.6.4.3 Comparing mergers and acquisitions accounting studies in developed and developing countries

Researchers are cautioned that there are fundamental differences to consider when a comparison is made between M&A in developed and developing countries.

The developed countries have a well-developed legal system to protect the interests of shareholders and the welfare of consumers. This differs from many developing countries that suffer from a poor legal environment as well as weak enforcement of existing laws (La Porta, Lopez-de-Silanes, Shleifer, & Vishny, 1999:510).

Cultural and governance differences between developing and developed countries also lead to differences in the organisational structure of companies. These differences must be considered in the evaluation of M&A (Kwok & Tadesse, 2006:227).

It was accepted in this study that some of the theories used to explain the M&A phenomena in developed countries may not be appropriate when explaining M&A activities in developing countries (Ma, Pagan & Chu, 2009:236).

2.7 Summary

This chapter defined and reviewed types of M&A, and the motives for forming M&A. The different approaches to measure M&A corporate performance were also considered.

Event studies were considered to measure corporate performance, but problems were encountered when relating equity value gains to improvements in subsequent corporate performance (Healy et al., 1992:136). Surveys of executives and clinical studies were also considered but they do not test hypotheses, they aim to describe, rather than test (Bruner, 2004:34).

Accounting study was selected as the most appropriate method to measure M&A corporate performance for this study.

The literature reviewed in this chapter revealed that post M&A corporate performance for the combined company increased in developed countries and in
developing countries showed no significant changes when the accounting study approach was applied.

In South Africa only a few accounting-related studies has been conducted to measure M&A corporate performance (Smit & Ward 2007:1).
Chapter 3

Research methodology

3.1 Introduction
In the previous chapter literature relating to mergers and acquisitions (M&A) was discussed. In this chapter, the applicable research methodology that was applied in this study is explored.

3.1.1 Research goal
To contextualise the research methodology that was applied, the study goal and research question are briefly highlighted again.

The primary goal of this study was to determine if corporate performance post M&A as measured by selected accounting ratios, does actually change.

3.2 Research questions
The primary research question of this study was whether corporate performance changes post M&A.

To support the primary research question of this study the supporting questions, as highlighted in chapter one, were investigated.

3.3 Research design
The research design is the method employed by the researcher, or general techniques applied, to test a hypothesis in order to come to a conclusion (Hofstee, 2006:108).

The criterion of measurement of corporate performance continues to be a subject of relevance for academics and researchers in the field of empirical research (Kumar & Rajib, 2007:121). The measurement can be either quantitative or qualitative.

Quantitative research can be defined as an enquiry into a problem, based on testing a theory composed of variables, measured with numbers and analysed statistically (De Vos, Strydom, Fouche & Delport, 2002:18). A quantitative approach applying an
accounting analysis was applied in this study. This approach is similar to that applied by Cornett and Tehranian (1992:212) and Kumar and Bansal (2008:1535) in their study of M&A corporate performance.

3.3.1 Quasi-experimental design

An experiment can be defined as a research method that allows the evaluation of causal relationships among variables.

A quasi-experimental design is a design that does not meet the criteria of a true experimental design as it fails to adequately control the problems associated with loss of internal and external validity. Internal validity is the validity determined by whether an experimental treatment was the sole cause of changes in a dependent variable. While external validity is the ability of an experiment to generalise the results to the external environment (Zikmund, 2003:257–275).

A quasi-experimental design was applied in this research to study accounting relationships. This design is regarded as adequate because the research was not attempting to establish a causal relationship between the pre and post M&A data. Thus, the problems associated with external or internal validity did not affect this research. The quasi-experimental design was only applied to measure the pre and post M&A impact.

The accounting study utilised a one-group pre-test post-test design. A one-group pre-test post-test design is a quasi–experimental design in which subjects in the experimental group are measured before and after an activity is administered, but in which no control group is used (Zikmund, 2003:276).

By definition, the accounting study is in itself a pre-test post-test design. It was applied to measure the M&A impact, which involved examining the accounting data for companies before (pre-test) and after (post-test) the M&A, to determine a change in corporate performance (Bruner, 2004:34; Pautler, 2001:8).

3.3.2 Research methodology

Research methodology can be defined as the manner in which the thesis statement is considered, or as the general technique that is employed to examine the thesis statement (Hofstee, 2006:108).

The research methodology that was applied in this research is an accounting study.
3.3.2.1 Accounting study

An accounting study is a quantitative method that can be applied to examine M&A corporate performance. It involves examining the accounting data of companies before and after M&A. This is done to determine the change in corporate performance (Bruner, 2004:34; Pautler, 2001:8).

Post M&A corporate performance studies that apply financial accounting data seek to determine whether, on average, M&A are followed by changes in profitability (Kumar, 2009:146). Accounting studies have applied various combinations of accounting ratios as proxy of M&A corporate performance (Wang & Moini, 2012:4). The focus of these studies ranges from return on capital employed, return on assets, operating profit margin, return on net worth, cash flow return, net profit margin, and return on equity, to any number of other accounting and financial measures of company corporate performance (Dewan 2012:5; Knapp, Gart & Chaudhry 2006:3506; Kumar & Bansal 2008:1535; Leepsa & Mishra 2012:13; Lau, Proimos & Wright 2008:175; Ransariya 2010:175; Sinha & Kaushik 2010:192).

Schoenberg (2006:370) recommended that studies should “consider employing multiple corporate performance measures to get a holistic view of the outcomes”.

Following the Schoenberg (2006:370) recommendation and guidelines on M&A accounting studies by various researchers, corporate performance was evaluated in this study by the following accounting ratios:

- Inflation adjusted return on assets
- Inflation adjusted return on equity
- Operating profit margin
- Return on capital employed

3.3.2.2 Justification of the research methodology

Bruner (2004:35) justifies the application of the accounting studies to investigate M&A as follows:

- Accounting studies have a high degree of credibility because financial statements for public limited companies have been audited.
Accounting studies provide information that is used by investors to judge corporate performance, which is also a measure of economic value creation.

3.4 Data sources

Data are defined as the recorded measure of a certain phenomenon (Zikmund, 2003:21). Two data sources were used in this study to gather the relevant data for analysis, namely the Ernst & Young M&A database and the McGregor BFA-Net Analyser.

The data obtained from Ernst & Young covered the research period from 2003 to 2009. This data is subdivided into 37 different categories including: acquirer, target, seller, value, feature, description, caution date, announcement date, effect date, cash value, share value, target pre JSE Ltd, target post JSE Ltd, acquirer pre JSE Ltd, acquirer post JSE Ltd, shares or assets, percentage shares acquired, takeover code, considerations, comments, acquirer code, target code and sellers code.

The McGregor BFA-Net Analyser provides data via a web-based facility. The data are provided in real time and caters for current changes in the market. McGregor BFA-Net obtains data from a wide variety of sources including the JSE Ltd, financial statements, published ratios, dividend history, data list search, trades and transactions, financial models, price data, fact sheets and technical charts. McGregor BFA is the pre-eminent provider of stock market, fundamental research data, news to the financial sector and the corporate market at large (www.mcgregorbfa.com).

Accounting ratios for pre and post M&A for this accounting study were obtained and analysed by The McGregor BFA-Net Analyser.

3.5 Sampling strategy

3.5.1 Target population

The target population consists of all companies listed on the JSE Ltd in the financial sector that participated in M&A. For companies to have been included in the sample they had to fall within the study delineations, which are further discussed below.
3.5.1.1 Period of merger and acquisition

M&A between 1 January 2003 and 31 December 2009 is included in the study.

This study commenced in 2010 and the sample period was selected to include the sixth M&A wave (Matthews, 2011:¶1).

3.5.1.2 JSE Ltd. financial sector

Acquiring and targeted M&A companies that form part of the financial sector on the JSE Ltd. were included in the sample for analysis.

3.5.1.3 Mergers and acquisitions of related business

M&A in the financial sector and related businesses were included in the study. Any M&A in-between a financial and a non-financial company were not included in the study. Hence, only horizontal M&A were covered in this research.

3.5.1.4 Percentage of target company acquired

In order to measure a significant impact of the M&A in the combined company, only 100% share or asset acquisitions of target companies by the acquiring company were included in the sample. Partial target company acquisitions were not included.

3.5.1.5 Market capitalisation

The market capitalisation of the target company must be at least 5% of the acquiring company to be included in the study sample (Pallant, 2007:225).

3.6 Data collection methodology

3.6.1 Secondary data

Secondary data analysis is concerned with applying pre-existing data in a different way or to answer a different research question than what was intended by those who collected the data originally (Zikmund, 2003:115).

This study made use of secondary data in a quasi-experimental research design.
3.6.1.1 Advantages of secondary data

The cost of obtaining the secondary data was minimal as no payment was required for accessing the Ernst & Young M&A database and the McGregor BFA-Net Analyser facility.

Secondary data was stored electronically by the various institutions i.e. Ernst & Young and McGregor BFA, which saved data collection time.

The extensiveness of the data provided by Ernst & Young and McGregor BFA-Net gave the researcher sufficient opportunity to analyse it.

3.6.1.2 Disadvantages of secondary data

Secondary data is inherently limited in its nature, because the data is usually not collected to answer all the researchers’ specific research questions. Some parameters such as information pertaining to M&A size, which was required for this study, was not included in the secondary data collected by Ernst & Young.

Variables from the Ernst & Young database were categorised differently than what was required by this research.

3.7 Data analysis

Data analysis can be described as the process of converting data into information (Hofstee, 2006:117).

The pre and post M&A inflation adjusted return on assets (IAROA), inflation adjusted return on equity (IAROE), operating profit margin (OPM), return on capital employed (ROCE) data was tabulated in MS Excel. This data were then exported into SPSS (Statistical Product and Service Solutions) for further analysis. SPSS is a statistical analytical package (Lund & Lund, 2012:¶1).

3.7.1 Test for normal distribution

The study sample data were analysed to determine if data was normally distributed. The distribution of data was then investigated to establish which method would be most applicable to determine changes in corporate performance.
This preliminary data analysis was conducted in SPSS. The Shapiro-Wilk test for normality was applied because the sample was below fifty (N<50) (Pallant, 2007:214).

A hypothesis test was conducted for each set of corporate performance measures to determine normality. A hypothesis is an unproven proposition or supposition that tentatively explains certain facts or phenomena (Zikmund, 2003:499).

The null and alternative hypotheses are expressed as:

- Null hypothesis \((H_0)\) = The pre M&A corporate performance measures are normally distributed.
- Alternative hypothesis \((H_1)\) = The pre M&A corporate performance measures are not normally distributed.
- Null hypothesis \((H_0)\) = The post M&A corporate performance measures are normally distributed.
- Alternative hypothesis \((H_1)\) = The post M&A corporate performance measures are not normally distributed.

A 0.050 (5%) level of significance was applied as this is widely accepted in academic research (Lund & Lund, 2012:¶25). If the probability values are greater than or equal to 0.050, the \(H_0\) will not be rejected (Lund & Lund, 2012:¶25). If the probability values are less than 0.050 then \(H_0\) will be rejected (Lund & Lund, 2012:¶25).

3.7.2 Parametric test (paired-sample t-test)
The paired-sample t-test is a parametric test used for comparing means scores for the same sample on two different occasions, or for matched pairs (Pallant, 2007:232).

For normally distributed data the paired-sample t-test was applied to calculate the corporate performance changes between pre and post M&A (Pallant, 2007:232).

3.7.3 Non-parametric test (Wilcoxon signed rank test)
The Wilcoxon signed rank test is a non-parametric test designed to be applied with repeated measures i.e. when the subjects are measured on two occasions, or under two different conditions (Pallant, 2007:223). It converts scores to ranks and compares them at time one and time two (Pallant, 2007:223).
If data in the study were not normally distributed, the Wilcoxon signed rank test was applied to calculate the changes in corporate performance pre and post M&A (Pallant, 2007:223).

The following analyses were further applied to the data.

### 3.7.4 Accounting study analysis

The purpose of the accounting study is to determine by means of accounting ratios (inflation adjusted return on assets, inflation adjusted return on equity, operating profit margin and return on capital employed) the difference between the pre and post M&A corporate performance.

The pre M&A accounting ratios were measured at the end of each acquiring company’s financial year (the immediate year before the M&A). The post M&A accounting ratios were measured when the combined company had completed its first financial year. Considering a longer period would have included additional criteria and effects, which could have been far from and or independent of the M&A process (Miron & Patel, 2008:44).

The change between the pre and post accounting ratios were calculated for each transaction applying parametric test (paired-sample t-test) or non-parametric test (Wilcoxon signed rank test) (Pallant, 2007:223–232).

### 3.7.5 Accounting study hypothesis testing

A hypothesis test was performed on whether there were changes in each accounting ratio pre and post M&A. The null and alternative hypotheses are expressed as:

- Null hypothesis \( (H_0) \) = There is no change between pre and post M&A on the IAROA.
- Alternative hypothesis \( (H_1) \) = There is change between pre and post M&A on the IAROA.
- Null hypothesis \( (H_0) \) = There is no change between pre and post M&A on the IAROE.
- Alternative hypothesis \( (H_1) \) = There is change between pre and post M&A on the IAROE.
• Null hypothesis (H₀) = There is no change between pre and post M&A on the OPM.
• Alternative hypothesis (H₁) = There is change between pre and post M&A on the OPM.
• Null hypothesis (H₀) = There is no change between pre and post M&A on the ROCE.
• Alternative hypothesis (H₁) = There is change between pre and post M&A on the ROCE.

The significant level is a critical probability in electing between the null and alternative hypothesis. The level of significance determines the probability level that is to be considered too low to warrant support of the null hypothesis (Zikmund, 2003:500). In this study statistical tests of significance were applied to explain the likelihood that experimental results differ from chance expectations (Thalheimer & Cook, 2002:2; Pallant, 2007:240).

The hypothesis test was done at 5% significant level (α=0.050). If the significance level is equal to or less than 0.050, it can be concluded that the differences between the pre and post M&A accounting ratios are statistically significant (Pallant, 2007:225).

3.7.6 Effect size

In this study the effect size measurements was applied to explain the relative magnitude of the experimental treatment or intervention effect (Thalheimer & Cook, 2002:2; Pallant, 2007:240).

Two procedures were applied to calculate the effect size.

When the paired-sample t-test was applied the Eta squared formula was applied. The formula for calculating eta squared according to Pallant (2007:240) is:

\[ Eta^2 = \frac{t^2}{t^2 + N - 1} \]  (1)

where \( t \) is the \( t \) statistic and \( N \) is the total number of observations over two time points.
When the Wilcoxon signed rank test was applied the effect size was calculated with.

\[ r = \frac{z}{\sqrt{N}} \]  

(2)

where \( z \) is the standard normal deviate and \( N \) the total number of observations over two time points (Pallant, 2007:225).

The effect size result was interpreted in line with the guidelines in Table 3.1 proposed by Cohen (1988:284–287).

**Table 3.1: Eta squared and Cohen’s \( d \) interpretation guidelines for effect size**

<table>
<thead>
<tr>
<th>Effect size</th>
<th>Eta squared</th>
<th>Cohen’s ( d )</th>
</tr>
</thead>
<tbody>
<tr>
<td>Small</td>
<td>0.100</td>
<td>0.200</td>
</tr>
<tr>
<td>Medium</td>
<td>0.600</td>
<td>0.500</td>
</tr>
<tr>
<td>Large</td>
<td>0.138</td>
<td>0.800</td>
</tr>
</tbody>
</table>

Source: (Pallant, 2007:208)

### 3.8 Ethical considerations

Ethical considerations form the core of sustainable research. According to Shamoo and Resnik (2003:3), a number of ethical considerations have to be adhered to for a quantitative research project to be sustainable. This research was based on these ethical considerations. Among others, the research remained objective and honest, and high levels of integrity and openness were maintained.

### 3.9 Limitations

This research had certain limitations that could have influenced its reliability.

The research method did not control other factors that might have caused corporate performance change, unrelated to the M&A (Bruner, 2004:32).

To isolate the impact of the M&A to only one year after the M&A may have limited a true assessment of post M&A corporate performance.

However, to increase the time-frame beyond one year may have made it difficult to distinguish the direct impact of the M&A as many other factors after one year may
have influenced corporate performance, other than the M&A (Miron & Patel, 2008:44).

The research was limited to the financial sector in South Africa, which limited the general application of the results. It was also limited to M&A companies in the financial sector listed on the JSE Ltd and thus the study excluded the private limited companies.

Qualitative variables namely selection of management team, resolving culture concerns and communication, were not addressed as these are subjective and to measure them might not have produced accurate results (Kelly, Cook & Spitzer, 1999:2).

According to Bruner (2004:35) researchers that make use of accounting studies have the following limitations:

- It is difficult to making cross-border or cross-company comparisons because different accounting principles may be used.
- Accounting studies are backward looking, as they do not present a projection on future returns.

3.10 Summary

The primary goal of this study was to determine if corporate performance post M&A as measured by selected accounting ratios does actually change. To achieve this goal, the sources of data to be employed and the specification of the research methodology to be applied were presented in this chapter.

The study followed a quantitative research approach based on a quasi-experimental research design. It was however not the aim of the study to determine causal relationships between variables.

The target population consisted of all companies listed on the JSE Ltd in the financial sector that participated in M&A and that fell within the study delineations.

The data analysis was based on an accounting study that investigated corporate performance by applying the following accounting ratios: inflation adjusted return on assets, inflation adjusted return on equity, operating profit margin and return on capital employed.
The accounting ratios data was obtained from Ernst & Young’s M&A database and the McGregor BFA-Net Analyser. The accounting ratios were tabulated in MS Excel and exported into SPSS for further analysis to determine the applicability and reliability.

Then the difference between the pre and post M&A accounting ratios was calculated by applying parametric and non-parametric approaches.

The research approach in this study was accepted based on previous studies that followed the same approaches successfully to study post M&A corporate performance in other countries (Cornett & Tehranian, 1992:212; Kumar & Bansal, 2008:1535).
Chapter 4
Data analysis and interpretation

4.1 Introduction
The previous chapter explored the research methodology that was applied in this study. This chapter highlights the study sample and analysis to contextualise the application of the pre and post M&A accounting analysis. Specific reference is also made to statistical testing to clarify the statistical relationship between variables. The chapter is concluded with a summary of the findings.

4.2 Description of the study population and sample
The study population was obtained from the Ernst & Young M&A database (Ernst & Young, n.d.). A total of 2,271 M&A of related businesses between 2003 and 2009 constitutes the population. This study commenced in 2010 and the sample period selected includes M&A up to the sixth wave (Matthews, 2011:¶1).

After the application of the selection criteria only 25 M&A were eligible for the study. Two M&A were excluded from the sample as financial data for these M&A was not available on the McGregor BFA database.

One M&A was also excluded from the sample because it was an outlier. The outlier was observed when the accounting ratios were plotted on a histogram. The outlier was caused by accounting ratios values that were too high compared to the rest of the selected M&A accounting ratios values. This brought the sample to 22 M&A.

The 22 M&A between 2003 and 2009, which makes up the final sample, are illustrated in Figure 4.1.

It is also illustrated in Figure 4.1 that there were six M&A in 2007, five in 2004 and five in 2003. There were two M&A in 2006 and 2009 respectively, while only one M&A in 2005 and 2008 respectively were included in the study sample.
Accounting ratios were applied to measure the change in pre and post M&A corporate performance. Ratio analysis is regarded as one of the more powerful tools of financial analysis (Ransariya, 2010:175).


Corporate performance is evaluated in this study by the following accounting ratios: inflation adjusted return on assets (IAROA), inflation adjusted return on equity (IAROE), operating profit margin (OPM) and return on capital employed (ROCE).

Each ratio was obtained one financial year before the M&A (pre M&A) and one financial year after M&A (post M&A). The differences between the post M&A ratios and pre M&A ratios are calculated, with the result regarded as the change in corporate performance.

The ratios data for this study were obtained from the McGregor BFA-Net Analyser, which provides data via a web-based facility (www.mcgregorbfa.com).
All pre and post M&A performance ratio data were analysed by means of SPSS, a statistical analytical package (Lund & Lund, 2012:¶1).

4.3.1 **Inflation adjusted return on assets (IAROA)**

The return on assets measures the management’s ability to apply the company assets to generate operating profits. The return on assets indicates the total return accruing to all providers of capital (debt and equity), independent of the source of capital (White, Sondhi & Fried, 1998:167). The formula applied to calculate IAROA is:

\[
\frac{((\text{Profit before interest and tax (EBIT)}) - (\text{Total profits extraordinary nature} - (\text{Inflation adjusted depreciable fixed asset}))}{(\text{Total assets} + (\text{Surplus value over book value of investment}) + (\text{Inflation adjusted other fixed asset}))} \times 100
\]

(3)

(www.mcgregorbfa.com)

The IAROA ratios were obtained from the McGregor BFA-Net Analyser (www.mcgregorbfa.com). The pre and post M&A, IAROA ratios for each of the 22 companies in the sample, is illustrated in Table 4.1.
Table 4.1: Pre and post M&A IAROA

<table>
<thead>
<tr>
<th>Acquirer</th>
<th>Year</th>
<th>Pre M&amp;A IAROA (%)</th>
<th>Post M&amp;A IAROA (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Insurance Outsourcing Managers Holdings Ltd</td>
<td>2003</td>
<td>-5.14</td>
<td>9.61</td>
</tr>
<tr>
<td>Hosken Consolidated Investments Ltd</td>
<td>2003</td>
<td>-16.05</td>
<td>8.60</td>
</tr>
<tr>
<td>Paramount Property Fund Ltd</td>
<td>2003</td>
<td>10.60</td>
<td>11.83</td>
</tr>
<tr>
<td>Santan Ltd</td>
<td>2003</td>
<td>4.79</td>
<td>19.20</td>
</tr>
<tr>
<td>Capital Alliance Holdings Ltd</td>
<td>2003</td>
<td>-0.93</td>
<td>3.36</td>
</tr>
<tr>
<td>Micromega Holdings Ltd</td>
<td>2004</td>
<td>-20.00</td>
<td>16.48</td>
</tr>
<tr>
<td>Micromega Holdings Ltd</td>
<td>2004</td>
<td>-20.00</td>
<td>16.48</td>
</tr>
<tr>
<td>Alexander Forbes Ltd</td>
<td>2004</td>
<td>1.75</td>
<td>0.91</td>
</tr>
<tr>
<td>Ilfour Properties Ltd</td>
<td>2004</td>
<td>17.20</td>
<td>17.00</td>
</tr>
<tr>
<td>Hosken Consolidated Investments Ltd</td>
<td>2004</td>
<td>-71.56</td>
<td>20.26</td>
</tr>
<tr>
<td>Bonatla Property Holdings Ltd</td>
<td>2005</td>
<td>-96.00</td>
<td>56.70</td>
</tr>
<tr>
<td>Micromega Holdings Ltd</td>
<td>2006</td>
<td>16.48</td>
<td>26.01</td>
</tr>
<tr>
<td>Cadiz Holdings Ltd</td>
<td>2006</td>
<td>22.15</td>
<td>15.23</td>
</tr>
<tr>
<td>Monyetla Property Fund Ltd</td>
<td>2007</td>
<td>20.92</td>
<td>16.18</td>
</tr>
<tr>
<td>Acucap Properties Ltd</td>
<td>2007</td>
<td>31.21</td>
<td>8.04</td>
</tr>
<tr>
<td>SA Corporate Real Estate Fund Ltd</td>
<td>2007</td>
<td>29.62</td>
<td>-5.03</td>
</tr>
<tr>
<td>Ambit Properties Ltd</td>
<td>2007</td>
<td>19.13</td>
<td>14.56</td>
</tr>
<tr>
<td>Growthpoint Properties Ltd</td>
<td>2007</td>
<td>6.42</td>
<td>6.80</td>
</tr>
<tr>
<td>Investec Ltd</td>
<td>2007</td>
<td>0.46</td>
<td>0.40</td>
</tr>
<tr>
<td>Micromega Holdings Ltd</td>
<td>2008</td>
<td>26.01</td>
<td>12.24</td>
</tr>
<tr>
<td>Redefine Income Fund Ltd</td>
<td>2009</td>
<td>5.42</td>
<td>12.88</td>
</tr>
<tr>
<td>Hospitality Property Fund Ltd</td>
<td>2009</td>
<td>16.56</td>
<td>19.98</td>
</tr>
</tbody>
</table>

Source: [www.mcgregorbfa.com](http://www.mcgregorbfa.com)

According to the data in Table 4.1, Micromega Holdings Ltd had two M&A in 2004. The effective date of the first M&A was 1 January 2004 and the second was 1 October 2004. Thus, Micromega Holdings Ltd appears twice under acquirer.

The data in Table 4.1 was further analysed in terms of applicability to the analysis of M&A. The IAORA data was first examined to determine the normality of the data distribution.

The distribution of IAROA data by means of the Shapiro-Wilk test (Pallant, 2007:214) is illustrated in Table 4.2.
The total sample of 22 M&A were analysed to determine if IAROA pre and post M&A were normally distributed. To determine the normal distribution of accounting ratios results, the Shapiro-Wilk test was applied (Pallant, 2007:214).

If the probability values (Sig.) are less than 0.050 it indicates an abnormal distribution of the accounting ratio results. If the probability values (Sig.) are greater than or equal to 0.050 it indicates a normal distribution of the accounting ratio results (Lund & Lund, 2012:¶25).

The probability values (Sig.) are illustrated in Table 4.2 to be less than 0.050. This indicates that the pre and post M&A IAROA are not normally distributed (Lund & Lund, 2012:¶25). Thus, the null hypothesises, which states that the pre and post M&A IAROA are normally distributed are rejected.

The Wilcoxon signed rank test was then applied to determine the pre and post M&A change in the IAROA (Pallant, 2007:223). This non-parametric test was applied because the pre and post M&A IAROA data are not normally distributed according to the Shapiro-Wilk test (Pallant, 2007:214). The results of the test are presented in Table 4.3.

### Table 4.3: Pre and post M&A IAROA ranks

<table>
<thead>
<tr>
<th>N</th>
<th>Mean rank</th>
</tr>
</thead>
<tbody>
<tr>
<td>9</td>
<td>9.000</td>
</tr>
<tr>
<td>13</td>
<td>13.230</td>
</tr>
</tbody>
</table>

The Wilcoxon signed rank test was then applied to determine the pre and post M&A change in the IAROA (Pallant, 2007:223). This non-parametric test was applied because the pre and post M&A IAROA data are not normally distributed according to the Shapiro-Wilk test (Pallant, 2007:214). The results of the test are presented in Table 4.3.

### Table 4.3: Pre and post M&A IAROA ranks

<table>
<thead>
<tr>
<th>Mean rank</th>
</tr>
</thead>
<tbody>
<tr>
<td>9.000</td>
</tr>
<tr>
<td>13.230</td>
</tr>
</tbody>
</table>

a. IAROA post M&A < IAROA pre M&A
b. IAROA post M&A > IAROA pre M&A
c. IAROA post M&A = IAROA pre M&A

Source: (Own deduction)
It is illustrated in Table 4.3 that:

- Nine of the sample companies post M&A IAROA were less than the pre M&A, IAROA.
- Thirteen of the sample companies post M&A IAROA were greater than the pre M&A, IAROA.

The relationship of pre and post IAROA was then further explored by means of IAROA percentile distribution.

**Table 4.4: The IAROA distribution**

<table>
<thead>
<tr>
<th></th>
<th>Percentiles</th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>N</td>
<td>25th</td>
<td>50th (Median)</td>
<td>75th</td>
</tr>
<tr>
<td>IAROA pre M&amp;A</td>
<td>22</td>
<td>-7.867</td>
<td>5.920</td>
<td>19.577</td>
</tr>
<tr>
<td>IAROA post M&amp;A</td>
<td>22</td>
<td>7.730</td>
<td>13.720</td>
<td>17.550</td>
</tr>
</tbody>
</table>

Source: (Own deduction)

The percentiles of the IAROA pre and post M&A are illustrated in Table 4.4. The median for each group was applied to express the central tendency of sample groups applying the Wilcoxon signed rank test (Lund & Lund, 2012:¶28). The median (Md) percentile indicates an increase in the corporate performance post M&A. From pre M&A (Md = 5.920) to post M&A (Md = 13.720).

The effect size of IAROA was determined by applying equation (2). This gave a result of -0.223, which indicates a small effect on corporate performance pre and post M&A (Cohen, 1988:284–287).

To determine the statistical significance of the IAROA pre and post M&A the Wilcoxon signed rank test was applied (Pallant, 2007:223). The results of the Wilcoxon signed rank test are illustrated in Table 4.5.
### Table 4.5: Significance of IAROA pre and post M&A

<table>
<thead>
<tr>
<th></th>
<th>IAROA post M&amp;A – IAROA pre M&amp;A</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Z</strong></td>
<td>-1.477</td>
</tr>
<tr>
<td>Asymp. Sig. (2-tailed)</td>
<td>0.140</td>
</tr>
</tbody>
</table>

Source: (Own deduction)

The z-value and the Asymp.Sig. (2-tailed) in Table 4.5 represent an indication of the significance of the IAROA pre and post M&A (Lund & Lund, 2012:¶36; Pallant, 2007:225). If the Asymp.Sig. (2-tailed) is equal to or less than 0.050, it can be concluded that the differences between the pre and post M&A accounting ratios are statistically significant (Pallant, 2007:225).

According to Table 4.5 $z = -1.477$ and Asymp.Sig. (2-tailed) = 0.140. Based on these results the Wilcoxon signed rank test indicates that M&A did not produce a statistically significant change in the IAROA pre and post M&A (Pallant, 2007:225). Therefore, the null hypothesis, which states that there is no change between pre and post M&A IAROA, is not rejected.

This result also indicates that the operational efficiency of the combined company as measures by IAROA did not produce a statistically significant change post M&A. Thus, the assets employed by the combined company did not result in a statistically significant change in the profit before interest and tax post M&A.

### 4.3.2 Inflation adjusted return on equity (IAROE)

Return on equity measures the return earned on the common stockholder’s investment in a company (Gitman, 2009:69). The equation to calculate the IAROE ratio is:

$$
\frac{([\text{Retained profits}]+([\text{Ordinary dividend}]-[(\text{Inflation adjusted depreciable fixed asset})]/([\text{Total owners interest}]+([\text{Surplus value over book value of investment}]+([\text{Inflation adjusted other fixed asset}]))*100))}{(\text{Retained profits}+([\text{Ordinary dividend}]-[\text{Inflation adjusted depreciable fixed asset}])/([\text{Total owners interest}]+([\text{Surplus value over book value of investment}]+([\text{Inflation adjusted other fixed asset}]))*100))} \times 100
$$

(4)

The IAROE ratios were obtained from the McGregor BFA-Net Analyser (www.mcgregorbfa.com). The pre and post M&A IAROE ratios for each of the 22 companies in the sample are illustrated in Table 4.6.
### Table 4.6: Pre and post M&A IAROE

<table>
<thead>
<tr>
<th>Acquirer</th>
<th>Year</th>
<th>Pre M&amp;A IAROE (%)</th>
<th>Post M&amp;A IAROE (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Insurance Outsourcing Managers Holdings Ltd</td>
<td>2003</td>
<td>-63.16</td>
<td>25.71</td>
</tr>
<tr>
<td>Hosken Consolidated Investments Ltd</td>
<td>2003</td>
<td>-21.30</td>
<td>18.68</td>
</tr>
<tr>
<td>Paramount Property Fund Ltd</td>
<td>2003</td>
<td>13.10</td>
<td>56.91</td>
</tr>
<tr>
<td>Santam Ltd</td>
<td>2003</td>
<td>8.75</td>
<td>31.98</td>
</tr>
<tr>
<td>Capital Alliance Holdings Ltd</td>
<td>2003</td>
<td>-20.16</td>
<td>22.70</td>
</tr>
<tr>
<td>Micromega Holdings Ltd</td>
<td>2004</td>
<td>-20.33</td>
<td>13.81</td>
</tr>
<tr>
<td>Micromega Holdings Ltd</td>
<td>2004</td>
<td>-20.33</td>
<td>13.81</td>
</tr>
<tr>
<td>Alexander Forbes Ltd</td>
<td>2004</td>
<td>35.97</td>
<td>17.10</td>
</tr>
<tr>
<td>Ifour Properties Ltd</td>
<td>2004</td>
<td>55.03</td>
<td>41.25</td>
</tr>
<tr>
<td>Hosken Consolidated Investments Ltd</td>
<td>2004</td>
<td>-159.00</td>
<td>45.55</td>
</tr>
<tr>
<td>Bonatla Property Holdings Ltd</td>
<td>2005</td>
<td>355.51</td>
<td>35.37</td>
</tr>
<tr>
<td>Micromega Holdings Ltd</td>
<td>2006</td>
<td>13.81</td>
<td>20.78</td>
</tr>
<tr>
<td>Cadiz Holdings Ltd</td>
<td>2006</td>
<td>23.32</td>
<td>21.34</td>
</tr>
<tr>
<td>Monyetla Property Fund Ltd</td>
<td>2007</td>
<td>106.70</td>
<td>38.11</td>
</tr>
<tr>
<td>Acucap Properties Ltd</td>
<td>2007</td>
<td>54.79</td>
<td>5.19</td>
</tr>
<tr>
<td>SA Corporate Real Estate Fund Ltd</td>
<td>2007</td>
<td>36.89</td>
<td>-7.20</td>
</tr>
<tr>
<td>Ambit Properties Ltd</td>
<td>2007</td>
<td>43.26</td>
<td>31.57</td>
</tr>
<tr>
<td>Growthpoint Properties Ltd</td>
<td>2007</td>
<td>1.55</td>
<td>-6.53</td>
</tr>
<tr>
<td>Investec Ltd</td>
<td>2007</td>
<td>2.58</td>
<td>1.39</td>
</tr>
<tr>
<td>Micromega Holdings Ltd</td>
<td>2008</td>
<td>20.78</td>
<td>5.78</td>
</tr>
<tr>
<td>Redefine Income Fund Ltd</td>
<td>2009</td>
<td>-3.59</td>
<td>7.86</td>
</tr>
<tr>
<td>Hospitality Property Fund Ltd</td>
<td>2009</td>
<td>73.03</td>
<td>29.63</td>
</tr>
</tbody>
</table>

Source: [www.mcgregorbfa.com](http://www.mcgregorbfa.com)

IAROE variables were first examined to determine the normality of the data distribution.

The normality of IAROE data as presented by the Shapiro-Wilk test (Pallant, 2007:214) is illustrated in Table 4.7.

### Table 4.7: Normality of IAROE data distribution

<table>
<thead>
<tr>
<th></th>
<th>Shapiro-Wilk</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>N</td>
</tr>
<tr>
<td>IAROE pre M&amp;A</td>
<td>22</td>
</tr>
<tr>
<td>IAROE post M&amp;A</td>
<td>22</td>
</tr>
</tbody>
</table>

Source: (Own deduction)
The total sample of 22 M&A was analysed to determine if the IAROE pre and post M&A were normally distributed. The results presented in Table 4.7 illustrate that the probability values (Sig.) are less than 0.050 for the IAROE pre M&A. This indicates that the pre M&A IAROE is not normally distributed (Lund & Lund, 2012:¶25). Thus, the null hypothesis which states that the pre M&A IAROE is normally distributed is rejected.

It is also illustrated in Table 4.7 that the probability values (Sig.) are greater than 0.050 for the IAROE post M&A. This indicates that the post M&A IAROE is normally distributed (Lund & Lund, 2012:¶25). Thus, the null hypothesis, which states that the post M&A IAROE is normally distributed, is not rejected.

When the pre M&A IAROE is not normally distributed and the post M&A IAROE is normally distributed, the Wilcoxon signed rank test was applied for ranking (Pallant, 2007:223). The Wilcoxon signed rank test, a non-parametric test, was applied because one of the variables is not normally distributed according to the Shapiro-Wilk test (Pallant, 2007:214-223).

The Wilcoxon signed rank test results are presented in Table 4.8

<table>
<thead>
<tr>
<th>IAROE post M&amp;A – IAROE pre M&amp;A</th>
<th>N</th>
<th>Mean rank</th>
</tr>
</thead>
<tbody>
<tr>
<td>Negative ranks</td>
<td>12a</td>
<td>10.670</td>
</tr>
<tr>
<td>Positive ranks</td>
<td>10b</td>
<td>12.500</td>
</tr>
<tr>
<td>Ties</td>
<td>0c</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>22</td>
<td></td>
</tr>
</tbody>
</table>

a. IAROE post M&A < IAROE pre M&A
b. IAROE post M&A > IAROE pre M&A
c. IAROE post M&A = IAROE pre M&A

Source: (Own deduction)

It is illustrated in Table 4.8 that:

- Twelve companies had post M&A IAROE less than their pre M&A, IAROE.
- Ten companies had post M&A IAROE greater than their pre M&A, IAROE.
The relationship of pre and post M&A IAROE was then further explored by means of IAROE percentile distribution.

### Table 4.9: The IAROE distribution

<table>
<thead>
<tr>
<th></th>
<th>N</th>
<th>Percentiles</th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>25th</td>
<td>50th (Median)</td>
<td>75th</td>
<td></td>
</tr>
<tr>
<td>IAROE pre M&amp;A</td>
<td>22</td>
<td>-20.202</td>
<td>13.455</td>
<td>46.142</td>
<td></td>
</tr>
<tr>
<td>IAROE post M&amp;A</td>
<td>22</td>
<td>7.340</td>
<td>21.060</td>
<td>32.827</td>
<td></td>
</tr>
</tbody>
</table>

Source: (Own deduction)

The percentiles of the IAROE pre and post M&A are illustrated in Table 4.9. The median (Md) percentile indicates an increase in the corporate performance post M&A. From pre M&A (Md = 13.455) to post M&A (Md = 21.060).

The effect size of IAROE was determined by applying equation (2). This gave a result of -0.01. This result indicates a small effect on corporate performance pre and post M&A as measured by the IAROE (Cohen, 1988:284–287).

To determine the statistical significance of the IAROE pre and post M&A, the Wilcoxon signed rank test was applied (Pallant, 2007:223). The results of IAROE by applying the Wilcoxon signed rank test (Pallant, 2007:223) are illustrated in Table 4.10.

### Table 4.10: Significance of IAROE pre and post M&A

<table>
<thead>
<tr>
<th></th>
<th>IAROE post M&amp;A – IAROE pre M&amp;A</th>
</tr>
</thead>
<tbody>
<tr>
<td>Z</td>
<td>-0.049</td>
</tr>
<tr>
<td>Asymp. Sig. (2-tailed)</td>
<td>0.961</td>
</tr>
</tbody>
</table>

Source: (Own deduction)

According to the data in Table 4.10, \( z = -0.049 \) and Asymp. Sig. (2-tailed) = 0.961. Based on this result, the Wilcoxon signed rank test indicates that the M&A did not produce a statistically significant change in the IAROE pre and post M&A (Pallant,
2007:225). Therefore, the null hypothesis, which states that there is no change between pre and post M&A IAROE, is not rejected. The common stockholders in the combined companies did not acquire a statistically significant change in their return.

The method by which the target company shareholders are paid affects the results of the IAROE. Where the method of payment was equity (as defined in the formula to calculate IAROE), it reduces the IAROE. This study did not consider the impact of the method of payment.

4.3.3 Operating profit margin (OPM)

The operating profit margin measures the percentage of each sale rand remaining after all costs and expenses other than interest, tax and preferred stock dividends are deducted (Gitman, 2009:66). The formula applied to calculate the OPM ratio is:

\[
\frac{\text{[(Profit before interest and tax (EBIT)] - [Total profits extraordinary nature]}/\text{(Turnover)}}}{\times 100}\]

(www.mcgregorbfa.com)

The OPM ratios were obtained from the McGregor BFA-Net Analyser (www.mcgregorbfa.com). The pre and post M&A OPM ratios for each of the 22 companies in the sample are illustrated in Table 4.11.
### Table 4.11: Pre and post M&A OPM

<table>
<thead>
<tr>
<th>Acquirer</th>
<th>Year</th>
<th>Pre M&amp;A OPM (%)</th>
<th>Post M&amp;A OPM (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Insurance Outsourcing Managers Holdings Ltd</td>
<td>2003</td>
<td>-0.82</td>
<td>0.42</td>
</tr>
<tr>
<td>Hosken Consolidated Investments Ltd</td>
<td>2003</td>
<td>-141.36</td>
<td>19.47</td>
</tr>
<tr>
<td>Paramount Property Fund Ltd</td>
<td>2003</td>
<td>79.89</td>
<td>100.45</td>
</tr>
<tr>
<td>Santam Ltd</td>
<td>2003</td>
<td>5.27</td>
<td>24.06</td>
</tr>
<tr>
<td>Capital Alliance Holdings Ltd</td>
<td>2003</td>
<td>66.57</td>
<td>64.61</td>
</tr>
<tr>
<td>Micromega Holdings Ltd</td>
<td>2004</td>
<td>-18.15</td>
<td>14.05</td>
</tr>
<tr>
<td>Micromega Holdings Ltd</td>
<td>2004</td>
<td>-18.15</td>
<td>14.05</td>
</tr>
<tr>
<td>Alexander Forbes Ltd</td>
<td>2004</td>
<td>18.75</td>
<td>17.39</td>
</tr>
<tr>
<td>Ifour Properties Ltd</td>
<td>2004</td>
<td>142.44</td>
<td>114.88</td>
</tr>
<tr>
<td>Hosken Consolidated Investments Ltd</td>
<td>2004</td>
<td>-158.42</td>
<td>36.41</td>
</tr>
<tr>
<td>Bonatla Property Holdings Ltd</td>
<td>2005</td>
<td>-47.68</td>
<td>62.37</td>
</tr>
<tr>
<td>Micromega Holdings Ltd</td>
<td>2006</td>
<td>14.05</td>
<td>12.05</td>
</tr>
<tr>
<td>Cadiz Holdings Ltd</td>
<td>2006</td>
<td>53.90</td>
<td>46.71</td>
</tr>
<tr>
<td>Monyetla Property Fund Ltd</td>
<td>2007</td>
<td>199.07</td>
<td>138.67</td>
</tr>
<tr>
<td>Acucap Properties Ltd</td>
<td>2007</td>
<td>363.62</td>
<td>125.09</td>
</tr>
<tr>
<td>SA Corporate Real Estate Fund Ltd</td>
<td>2007</td>
<td>345.34</td>
<td>-60.27</td>
</tr>
<tr>
<td>Ambit Properties Ltd</td>
<td>2007</td>
<td>172.07</td>
<td>154.09</td>
</tr>
<tr>
<td>Growthpoint Properties Ltd</td>
<td>2007</td>
<td>72.25</td>
<td>67.16</td>
</tr>
<tr>
<td>Investec Ltd</td>
<td>2007</td>
<td>0.00</td>
<td>0.00</td>
</tr>
<tr>
<td>Micromega Holdings Ltd</td>
<td>2008</td>
<td>12.05</td>
<td>6.23</td>
</tr>
<tr>
<td>Redefine Income Fund Ltd</td>
<td>2009</td>
<td>103.87</td>
<td>149.13</td>
</tr>
<tr>
<td>Hospitality Property Fund Ltd</td>
<td>2009</td>
<td>133.36</td>
<td>249.83</td>
</tr>
</tbody>
</table>

Source: (www.mcgregorbfa.com)

The OPM data was first analysed to determine the normality of the data distribution.

The normality test results of OPM data by applying the Shapiro-Wilk test (Pallant, 2007:214) are presented in Table 4.12.

### Table 4.12: Normality of OPM data distribution

<table>
<thead>
<tr>
<th></th>
<th>Shapiro-Wilk N</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>OPM pre M&amp;A</td>
<td>22</td>
<td>0.227</td>
</tr>
<tr>
<td>OPM post M&amp;A</td>
<td>22</td>
<td>0.201</td>
</tr>
</tbody>
</table>

Source: (Own deduction)
It is illustrated in Table 4.12 that the probability values (Sig.) are greater than 0.050. This indicates that the pre and post M&A OPM is normally distributed (Lund & Lund, 2012:¶5). Thus, the null hypothesis, which states that the pre and post M&A OPM are normally distributed, is not rejected.

The paired sample t-test was then applied to calculate the pre and post M&A change in the OPM (Pallant, 2007:214). The paired sample t-test was applied because the pre and post M&A OPM data are normally distributed according to the Shapiro-Wilk test (Pallant, 2007:214).

**Table 4.13: Change in pre and post M&A OPM**

<table>
<thead>
<tr>
<th></th>
<th>Mean</th>
<th>N</th>
<th>Standard deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>OPM pre M&amp;A</td>
<td>68.087</td>
<td>22</td>
<td>128.222</td>
</tr>
<tr>
<td>OPM post M&amp;A</td>
<td>66.220</td>
<td>22</td>
<td>69.571</td>
</tr>
</tbody>
</table>

Source: (Own deduction)

It is illustrated in Table 4.13 that OPM standard deviation pre M&A was 128.222 and post M&A was 69.571. The means of the OPM pre and post M&A are also illustrated. The mean indicates a decrease in the corporate performance post M&A form pre M&A ($M = 68.087$) to post M&A ($Md = 66.220$).

The OPM effect size was determined by applying equation (1). This gave a result of 0.02. This result indicates a small effect on, corporate performance pre and post M&A as measure by the OPM (Cohen, 1988:284–287).

To determine the statistical significance of the OPM pre and post M&A, the paired sample t-test was applied (Pallant, 2007:232).

The results of the paired sample t-test are illustrated in Table 4.14.
Table 4.14: Significance of OPM pre and post M&A

<table>
<thead>
<tr>
<th>Paired differences</th>
<th>Mean</th>
<th>Lower</th>
<th>Upper</th>
<th>t</th>
<th>Sig. (2-tailed)</th>
</tr>
</thead>
<tbody>
<tr>
<td>OPM pre M&amp;A –</td>
<td>1.866</td>
<td>-52.915</td>
<td>56.648</td>
<td>0.710</td>
<td>0.944</td>
</tr>
<tr>
<td>OPM post M&amp;A</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Source: (Own deduction)

The statistical significance in a paired sample $t$-test is indicated by the Sig. (2-tailed) value. If the value is less than 0.050 it indicates that there is significant differences between the two variables measured (Pallant, 2007:239).

According to the data in Table 4.14, $t = 0.71$ and Sig. (2-tailed) = 0.944. This indicates that there is no statistically significant change in OPM pre M&A and post M&A (Pallant, 2007:225). Therefore, the null hypothesis, which states that there is no change between pre and post M&A OPM, is not rejected.

4.3.4 Return on capital employed (ROCE)

The return on capital employed ratio represents the earning power of the capital employed in a company. It also displays the progress or deterioration in the earning capacity and efficiency of the company (Rao, 2003:102). The formula applied to calculate the ROCE ratio is:

$$\frac{([\text{Profit to ordinary and preference shareholders}] - [\text{Preference dividend}])}{([\text{Total owners interest}] + ([\text{Total long term loan capital}]) \times 100}$$

(6)

The ROCE ratios were obtained from the McGregor BFA-Net Analyser (www.mcgregorbfa.com). The pre and post M&A ROCE ratios for each of the 22 companies in the sample are illustrated in Table 4.15.
Table 4.15: Pre and post M&A ROCE

<table>
<thead>
<tr>
<th>Acquirer</th>
<th>Year</th>
<th>Pre M&amp;A ROCE (%)</th>
<th>Post M&amp;A ROCE (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Insurance Outsourcing Managers Holdings Ltd</td>
<td>2003</td>
<td>-59.7</td>
<td>25.71</td>
</tr>
<tr>
<td>Hosken Consolidated Investments Ltd</td>
<td>2003</td>
<td>-15.47</td>
<td>13.19</td>
</tr>
<tr>
<td>Paramount Property Fund Ltd</td>
<td>2003</td>
<td>0.16</td>
<td>2.21</td>
</tr>
<tr>
<td>Santam Ltd</td>
<td>2003</td>
<td>3.94</td>
<td>15.95</td>
</tr>
<tr>
<td>Capital Alliance Holdings Ltd</td>
<td>2003</td>
<td>-1.48</td>
<td>2.64</td>
</tr>
<tr>
<td>Alexander Forbes Ltd</td>
<td>2004</td>
<td>0.82</td>
<td>0.49</td>
</tr>
<tr>
<td>Ifour Properties Ltd</td>
<td>2004</td>
<td>3.84</td>
<td>3.73</td>
</tr>
<tr>
<td>Hosken Consolidated Investments Ltd</td>
<td>2004</td>
<td>-101.40</td>
<td>34.72</td>
</tr>
<tr>
<td>Bonatla Property Holdings Ltd</td>
<td>2005</td>
<td>355.51</td>
<td>22.45</td>
</tr>
<tr>
<td>Micromega Holdings Ltd</td>
<td>2006</td>
<td>13.13</td>
<td>20.12</td>
</tr>
<tr>
<td>Cadiz Holdings Ltd</td>
<td>2006</td>
<td>21.76</td>
<td>20.14</td>
</tr>
<tr>
<td>Monyetla Property Fund Ltd</td>
<td>2007</td>
<td>9.80</td>
<td>9.09</td>
</tr>
<tr>
<td>Acucap Properties Ltd</td>
<td>2007</td>
<td>17.77</td>
<td>2.04</td>
</tr>
<tr>
<td>SA Corporate Real Estate Fund Ltd</td>
<td>2007</td>
<td>28.70</td>
<td>-5.70</td>
</tr>
<tr>
<td>Ambit Properties Ltd</td>
<td>2007</td>
<td>8.71</td>
<td>6.66</td>
</tr>
<tr>
<td>Growthpoint Properties Ltd</td>
<td>2007</td>
<td>0.00</td>
<td>-0.33</td>
</tr>
<tr>
<td>Investec Ltd</td>
<td>2007</td>
<td>0.33</td>
<td>0.30</td>
</tr>
<tr>
<td>Micromega Holdings Ltd</td>
<td>2008</td>
<td>20.12</td>
<td>5.32</td>
</tr>
<tr>
<td>Redefine Income Fund Ltd</td>
<td>2009</td>
<td>-1.52</td>
<td>3.56</td>
</tr>
<tr>
<td>Hospitality Property Fund Ltd</td>
<td>2009</td>
<td>9.42</td>
<td>9.54</td>
</tr>
</tbody>
</table>

Source: (www.mcgregorbfa.com)

The ROCE data were first analysed to determine the normality of the data distribution.

The results of the ROCE data normality as presented by the Shapiro-Wilk test (Pallant, 2007:214) are illustrated in Table 4.16.

Table 4.16: Normality of ROCE data distribution

<table>
<thead>
<tr>
<th></th>
<th>Shapiro-Wilk</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>N</td>
</tr>
<tr>
<td>ROCE pre M&amp;A</td>
<td>22</td>
</tr>
<tr>
<td>ROCE post M&amp;A</td>
<td>22</td>
</tr>
</tbody>
</table>

Source: (Own deduction)
The total sample of 22 M&A was analysed to determine if the OPM pre and post M&A are normally distributed.

The results presented in Table 4.16 illustrates that the probability values (Sig.) is less than 0.050 for the ROCE pre M&A. This indicates that the pre M&A ROCE is not normally distributed (Lund & Lund, 2012:¶25). Thus, the null hypothesis which states that the pre M&A ROCE is normally distributed is rejected.

Table 4.16 also illustrates that post M&A ROCE probability values (Sig.) are greater than 0.050. This indicates that the post M&A ROCE is normally distributed. Thus, the null hypothesis, which states that the pre M&A ROCE is normally distributed, is not rejected.

If the pre M&A ROCE data is not normally distributed and the post M&A ROCE is normally distributed, the Wilcoxon signed rank test was applied to calculate the change in corporate performance pre and post M&A (Pallant, 2007:223).

Table 4.17: Pre and post M&A ROCE ranks

<table>
<thead>
<tr>
<th>ROCE post M&amp;A – ROCE pre M&amp;A</th>
<th>N</th>
<th>Mean rank</th>
</tr>
</thead>
<tbody>
<tr>
<td>Negative ranks</td>
<td>11a</td>
<td>9.410</td>
</tr>
<tr>
<td>Positive ranks</td>
<td>11b</td>
<td>13.590</td>
</tr>
<tr>
<td>Ties</td>
<td>0c</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>22</td>
<td></td>
</tr>
</tbody>
</table>

a. ROCE post M&A < ROCE pre M&A
b. ROCE post M&A > ROCE pre M&A
c. ROCE post M&A = ROCE pre M&A

Source: (Own deduction)

The results indicated in Table 4.17 illustrates that eleven acquiring companies achieved post M&A corporate performance increases, while eleven acquiring companies attained post M&A corporate performance change decreases.

The pre and post M&A relationship of ROCE was further explored by means of ROCE percentile distribution.
Table 4.18: The ROCE distribution

<table>
<thead>
<tr>
<th></th>
<th>N</th>
<th>25th</th>
<th>50th (Median)</th>
<th>75th</th>
</tr>
</thead>
<tbody>
<tr>
<td>ROCE pre M&amp;A</td>
<td>22</td>
<td>-5.007</td>
<td>2.330</td>
<td>14.290</td>
</tr>
<tr>
<td>ROCE post M&amp;A</td>
<td>22</td>
<td>2.167</td>
<td>7.875</td>
<td>16.992</td>
</tr>
</tbody>
</table>

Source: (Own deduction)

The percentiles of the ROCE pre and post M&A are illustrated in Table 4.18. The median (Md) percentile indicates an increase in the corporate performance post M&A from pre M&A (Md = 2.330) to post M&A (Md = 7.875).

The effect size of ROCE was determined by applying equation (2). This gave a result of -0.160. This result indicates a small effect on corporate performance pre and post M&A as measured by the ROCE (Cohen, 1988:284–287).

To determine the statistical significance of the ROCE pre and post M&A the Wilcoxon signed rank test was applied (Pallant, 2007:223).

Table 4.19: Significance of ROCE pre and post M&A

<table>
<thead>
<tr>
<th></th>
<th>ROCE post M&amp;A – ROCE pre M&amp;A</th>
</tr>
</thead>
<tbody>
<tr>
<td>Z</td>
<td>-0.747</td>
</tr>
<tr>
<td>Asymp. Sig. (2-tailed)</td>
<td>0.455</td>
</tr>
</tbody>
</table>

Source: (Own deduction)

According to Table 4.19, z = -0.747 and Asymp.Sig. (2-tailed) = 0.455. Based on this result the Wilcoxon signed rank test indicates that the M&A did not produce a statistically significant change in the pre and post M&A, ROCE (Pallant, 2007:225). Thus, the null hypothesis, which states that there is no change between pre and post M&A ROCE, is not rejected.
4.4 Changes in pre and post mergers and acquisitions corporate performance

The research problem of this study was that share price performance studies were unable to determine whether M&A create post M&A corporate performance change. Therefore, the researcher applied an alternative approach – the accounting study approach – to determine whether M&A create post M&A corporate performance change.

The findings of this study include that there are no statistically significant differences between the pre and post M&A corporate performance as measured by all the selected accounting ratios.

This result is similar to a study conducted in South Africa by Smit and Ward (2007:12), where insignificant changes in industry adjusted operating financial performance were noted post M&A and there was concluded that on average, M&A do not result in any improvement or deterioration in the corporate performance of the combined company.

The study’s results are also comparable to those found by Dewan (2012:5) in India as presented in Table 4.20. All the corporate performance measures applied by Dewan (2012:5) except the debt equity ratio resulted in $t$-test results that were not statistically significant.

<table>
<thead>
<tr>
<th>Ratios</th>
<th>Pre-merger</th>
<th>Post-merger</th>
<th>$t$-test results (0.05 significance)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Operating profit margin</td>
<td>61.313</td>
<td>72.121</td>
<td>Not Significant</td>
</tr>
<tr>
<td>Gross profit margin</td>
<td>37.598</td>
<td>43.890</td>
<td>Not Significant</td>
</tr>
<tr>
<td>Net profit margin</td>
<td>15.421</td>
<td>8.721</td>
<td>Not Significant</td>
</tr>
<tr>
<td>Return on net worth</td>
<td>16.611</td>
<td>23.592</td>
<td>Not Significant</td>
</tr>
<tr>
<td>Return on capital employed</td>
<td>19.325</td>
<td>16.583</td>
<td>Not Significant</td>
</tr>
<tr>
<td>Debt equity ratio</td>
<td>1.193</td>
<td>2.137</td>
<td>Significant</td>
</tr>
</tbody>
</table>

Source: (Dewan, 2012:5)
This study’s results also concur with Leepsa and Mishra (2012:13) who found that the profitability ratios (return on capital employed and return on net worth) in selected Indian companies were not statistically significant pre and post M&A.

4.5 Summary

In this chapter the sample and data analysis was elaborated on.

The study sample was made up of 22 M&A and was selected according to sampling strategy chosen for the study.

Accounting ratios were applied to measure the change in pre and post M&A corporate performance.

The accounting ratios applied as performance indicators consisted of: inflation adjusted return on assets (IAROA), inflation adjusted return on equity (IAROE), operating profit margin (OPM) and return on capital employed (ROCE).

Data for each ratio were obtained one financial year before the M&A (pre M&A) and one financial year after M&A (post M&A). The differences between the post M&A ratios and pre M&A ratios were calculated with the result regarded as the change in corporate performance.

Statistical testing was applied to verify the normality and applicability of the performance indicator data.

The statistical significance of the changes in accounting ratios pre and post M&A was determined. Although the different accounting ratios applied to measure corporate performance indicated differences in pre and post M&A performance, none of the accounting ratios indicated a statistical significant change between pre and post M&A performance.
Chapter 5

Conclusion and recommendations

5.1 Introduction

In the previous chapter the sample of pre and post M&A data was analysed and the findings were highlighted. In this chapter conclusions are drawn and recommendations are made based on the findings of the study of M&A.

Firstly, the research problem, goal and research questions are highlighted to contextualise the conclusions and recommendations.

The research findings on M&A are then summarised, conclusion are drawn and recommendations are made.

The limitations of this study are thereafter discussed specifically relating to the general applicability of the research findings.

The chapter is concluded with final remarks.

5.2 Research problem and research questions

In the formulation of the research problem of this study it was concluded that share price performance studies were unable to determine whether M&A create corporate performance change post M&A.

Because the goal of this study was to determine if corporate performance posts M&A as measured by selected accounting ratios does actually change, an alternative approach to measure corporate performance was considered.

Different approaches to measure M&A corporate performance have been considered by researchers. Event studies measure corporate performance but have a problem in relating equity value gains to improvements in subsequent corporate performance
Surveys of executives and clinical studies aim to describe, rather than test hypotheses (Bruner, 2004:34). Accounting studies examine the reported financial results (i.e. accounting statements) of acquirers before and after M&A to determine how corporate performance changed (Bruner, 2004:33).

Accounting study was selected as the most appropriate method to measure M&A corporate performance for the purpose of this study. The accounting study method encompasses calculating the difference between the pre and post M&A accounting ratios by applying parametric and non-parametric approaches.

The primary research question addressed in this study was whether corporate performance change post M&A.

To support the research question, the following supporting questions were investigated:

- What changes occur in inflation adjusted return on assets post M&A?
- What changes occur in inflation adjusted return on equity post M&A?
- What changes occur in operating profit margin post M&A?
- What changes occur in return on capital employed post M&A?
- Are the changes in inflation adjusted return on assets, inflation adjusted return on equity, operating profit margin and return on capital employed post M&A statistically significant?

5.3 Summary of the findings

The study population consisted of 2,271 M&A and after the application of the selection criteria stipulated in section 3.5, only 22 M&A were eligible for the study.

Once the sample was established accounting ratios were applied to measure the pre and post M&A corporate performance.

The accounting ratios applied to measure corporate performance consisted of inflation adjusted return on assets (IAROA), inflation adjusted return on equity (IAROE), operating profit margin (OPM) and return on capital employed (ROCE).

The selected accounting ratios in the sample of M&A were analysed to determine if data was normally distributed. Because the study sample was below fifty (N<50), the Shapiro-Wilk test for normality was applied (Pallant, 2007:214). The data analyses
indicated a mixture of normally distributed and abnormally distributed pre and post M&A accounting ratios results.

This mixed results lead to the application of the Wilcoxon signed rank test and the paired sample t-test to determine corporate performance changes between pre and post M&A (Pallant, 2007:232–223).

The Wilcoxon signed rank test was applied on the IAROA, IAROE and ROCE pre and post M&A accounting ratios as illustrated by Table 5.1 (Pallant, 2007:223).

The results of this tests indicated that M&A did not produce a statistically significant change in the IAROA, IAROE and ROCE pre and post M&A. It can be concluded that according to this measure there is no reason to believe that M&A had a significant influence on corporate performance.

Because the OPM ratios in the study sample were normally distributed, the paired sample t-test was applied to determine whether there is a significant difference between pre and post M&A OPMs (Pallant, 2007:232). The paired sample t-test results indicated that M&A did not produce a statistically significant change in the OPM pre and post M&A. Therefore, based on pre and post OPM there is no significant change in corporate performance because of the M&A.

The results of the accounting study is summarised in Table 5.1.
Table 5.1: Summary of accounting study results

<table>
<thead>
<tr>
<th>Accounting ratios</th>
<th>N</th>
<th>Distribution</th>
<th>Test</th>
<th>Means</th>
<th>Percentile (Median)</th>
<th>Effect size</th>
<th>Z</th>
<th>Asymp. Sig</th>
</tr>
</thead>
<tbody>
<tr>
<td>IAROA pre M&amp;A</td>
<td>22</td>
<td>Not normal</td>
<td>Wilcoxon Sign Rank test</td>
<td>-0.043</td>
<td>5.920</td>
<td>-0.220</td>
<td>-1.477</td>
<td>0.140</td>
</tr>
<tr>
<td>IAROA post M&amp;A</td>
<td>22</td>
<td>Not normal</td>
<td>Wilcoxon Sign Rank test</td>
<td>13.987</td>
<td>13.720</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>IAROE pre M&amp;A</td>
<td>22</td>
<td>Not normal</td>
<td>Wilcoxon Sign Rank test</td>
<td>24.418</td>
<td>13.455</td>
<td>-0.010</td>
<td>-0.049</td>
<td>0.961</td>
</tr>
<tr>
<td>IAROE post M&amp;A</td>
<td>22</td>
<td>Normal</td>
<td>Paired sample t-test</td>
<td>21.399</td>
<td>21.060</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>OPM pre M&amp;A</td>
<td>22</td>
<td>Normal</td>
<td>Paired sample t-test</td>
<td>68.087</td>
<td>-</td>
<td>0.020</td>
<td>0.710*</td>
<td>0.944</td>
</tr>
<tr>
<td>OPM post M&amp;A</td>
<td>22</td>
<td>Normal</td>
<td>Paired sample t-test</td>
<td>66.220</td>
<td>-</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ROCE pre M&amp;A</td>
<td>22</td>
<td>Not normal</td>
<td>Wilcoxon Sign Rank test</td>
<td>12.496</td>
<td>2.330</td>
<td>-0.160</td>
<td>-0.747</td>
<td>0.455</td>
</tr>
<tr>
<td>ROCE post M&amp;A</td>
<td>22</td>
<td>Normal</td>
<td>Wilcoxon Sign Rank test</td>
<td>9.913</td>
<td>7.875</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* t-value

Source: (Own deduction)

The effect sizes of M&A were measured to determine the magnitudes of the impact of M&A (Thalheimer & Cook, 2002:2; Pallant, 2007:240). It is illustrated in Table 5.1 that the effect size of all the accounting variables pre and post M&A was insignificant. Based on the analysis of these variables M&A do not have a significant influence on corporate performance in the first year after an M&A.

The findings of this study compares well with the deductions by Smit and Ward (2007:12). They found that, on average, M&A do not result in any improvement or deterioration in the corporate performance of the acquiring company. This finding is also consistent with Ghosh’s views (2001:177) who concluded that M&A are, on average, zero net present value investments.

5.4 Conclusion

The researcher came to the conclusion that the sample of financial companies that engaged in M&A did not experience a significant change in corporate performance within their first financial year post M&A. This could mean that companies that engage in M&A do not necessary aim to achieve an increase in corporate performance for the acquirers in the first financial year post M&A.
During the first financial year post M&A company management concentrate on integrating the combined companies and does not necessarily focus on activities that generate immediate M&A corporate performance change (Kumar, 2009:154).

5.5 Contribution and recommendation

Prior studies on the impact of M&A on the corporate performance focused on developed countries with less attention applied to developing countries (Ma, Pagan & Chu, 2009:236). The researcher of this study explored the impact of M&A on the corporate performance of selected South African companies and contributes to the existing literature on M&A in a developing country.

The results of this study will provide managers with insight in pre and post M&A performance and an alternative methodology to determine the change in corporate performance.

If future expansion is planned by means of M&A, corporate performance as reflected by the variables that was analysed in this study, might not improve significantly.

Policy makers, managers, investors and academics should note that M&A corporate performance are influenced by different factors. Companies that are engaging in M&A should manage the expectation of all stakeholders including synergy, hubris and the agency motives.

5.6 Limitation

The results of the study cannot be generalised since only JSE Ltd listed companies in the financial sector were studied. All the proxies for corporate performance, i.e. accounting ratios applied in this study were based on net income. Hence, they might be affected by the accounting treatment of taxation, depreciation methods, stock valuation etc. (White, Sondhi & Fried, 1998:142).

Data were not readily available and secondary data, which was collected for another purpose, had to be applied.

The researcher did not specifically investigate the strategic intent of the M&A. The strategic intent for some M&A may not necessarily be for short-term increase in corporate performance, although any benefit arising from M&A will finally reflect in the company's accounting statement (Tuch and O’Sullivan, 2007:164).
Qualitative variables such as management team, resolving culture concerns and communication, were not addressed as these are highly subjective and measuring them might not produce accurate results (Kelly, Cook & Spitzer, 1999:2).

5.7 Recommendations for further research

Further studies could investigate why post M&A corporate performance do not change and could also include additional and varied corporate performance measures and increase the post M&A observation period, to obtain better insight into the combined company corporate performance.

5.8 Final remarks

It is noted that strategic and non-financial motives to form M&A may influence corporate performance. These motives fell outside the scope of this study and were not considered.

The accounting approach to study M&A performance was regarded as suitable for the purposes of this study. The strategic aim of a company with a profit motive is to earn a satisfactory return on capital and any benefit arising from M&A will finally be reflected in the company’s accounting statement (Tuch & O’Sullivan, 2007:164).

The researcher managed to achieve his goal to determine if corporate performance post M&A, as measured by selected accounting ratios, does actually change. Based on the methodology applied, it is concluded that M&A do not result in any statistically significant increase or decrease in corporate performance within the first financial year post M&A.


