The effect of foreign ownership on the financial performance of listed companies

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ABSTRACT

This study examined the effect of foreign ownership on the financial and market performance of firms in the South African economy. To review this relationship 18 foreign owned firms listed on the Johannesburg Stock Exchange All Share Index in 2010 were identified and paired with a locally owned firm of a similar size, in the same economic sector and with the same ownership model. The analysis was done in two phases. Phase One reviewed the financial and market indicators; Phase Two reviewed the investor return. The analysis in Phase One showed that foreign ownership did not result in any financial benefits for the firm, if Return on Assets and Return on Equity were used as proxies for financial performance. There was some evidence that foreign corporate firms create more value, as indicated by the percentage of EVA increase of 4.6% for the corporate ownership model. Differences in the Weighted Average Cost of Capital (WACC) between the local and foreign corporate ownership models could indicate that this increase is an accounting anomaly rather than an absolute benefit. Market growth data showed the opposite that locally owned institutional firms performed significantly better than foreign-owned institutional firms. In Phase Two, it was shown that although there was a material difference between the different portfolio returns, with the local portfolios performing better, the difference was not statistically significant. Overall, it can be concluded that there is very limited proof that foreign ownership has any secondary beneficial effect on the financial performance of South African firms.

Key Words:

Foreign Direct Investment, Foreign Ownership, Agency Theory, Institutional Ownership, Corporate Ownership

DECLARATION

I declare that this research project is my own work. It is submitted in partial fulfillment of the requirements for the degree of Master of Business Administration at the Gordon Institute of Business Science, University of Pretoria. It has not been submitted before for any degree or examination in any other University. I further declare that I have obtained the necessary authorisation and consent to carry out this research.

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Willem Carel Ernst Swart
7 November 2012

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CHAPTER 1:

INTRODUCTION

1.1 Background

In the last two decades, there has been a dramatic increase in foreign investments involving all countries around the world. This increase in foreign investment can be attributed in part to the phenomenon of globalization. Although globalization is not a new concept, it has been increasingly debated since the 1990s as the shift to an integrated world market became more marked, and began to open up new growth opportunities for firms (Mapuva, 2010).

The importance of multi-national enterprises (MNEs) and foreign direct investment (FDI) has increased significantly and has outpaced the growth of trade between countries in recent years (Ebersberger & Loof, 2004). FDI is defined as a long-term investment by an investor in a value-adding activity outside the investor's country of origin (OECD, 1999). Such a long-term investment can take one of two forms. The first form of long-term investment is institutional investment, or portfolio investment. This is where the investor does not take any control over a foreign entity, but has shares or investment in shares in the foreign entity invested on the investor's behalf by investment funds (Douma, George, & Kabir, 2006). The second form of long-term investment is a corporate investment, where the investor takes partial or full control over the entity in the foreign country with the intention of adding value, for example, to MNEs or their subsidiaries (Douma et al., 2006). Figure 1 shows the significant increase in global FDI value since the mid-1990s.
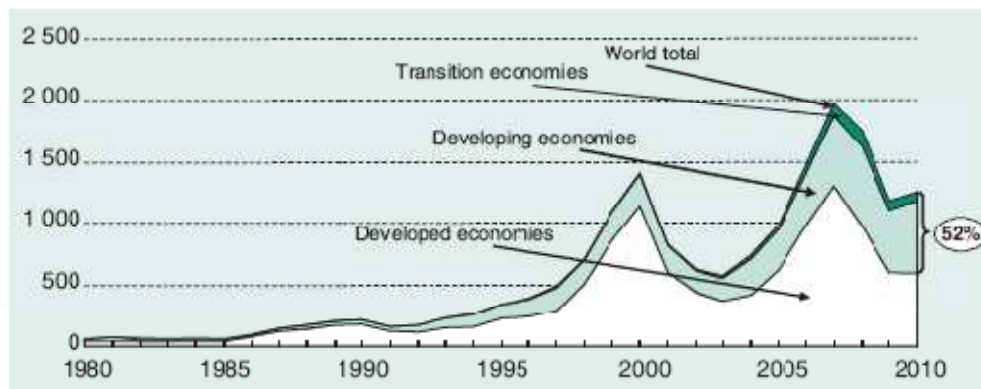
Figure 1: World Wide FDI Inflows in 2010
(Source: UNCTAD, 2011, p.3)

Governments across the world in developing countries see this FDI growth as a priority for a country's growth, not only because it generates capital, but also because it has the potential to bring new technology and better management practices from more developed countries that could aid local companies in less developed countries in improving their performance and productivity (Chari, Chen, & Dominguez, 2009; Moolman, Roos, Le Roux, & Du Toit, 2006).

According to FDI and foreign ownership theory, foreign-owned firms have a performance advantage over locally owned firms. It is postulated that these performance increases arise because foreign-owned firms theoretically have access to superior production technology, organisational improvements and better management practices, and they also potentially have increased access to foreign markets (Gelübcke, 2011; Javorcik, 2004; Ngowi, 2001; Ongore, 2011).

The effect of foreign ownership on a firm's performance has been studied extensively in the international financial literature. Many of the studies showed the benefits of foreign ownership for enterprises, but there is also a large body of evidence that suggests that proof of such benefits is not conclusive, or may even be absent. The reason for this is that each country or economy behaves differently with regard to foreign ownership, and the situation has to be analysed on a country-by-country basis. From the literature reviewed, it seems that the prior studies have not thus far focused on the specific potential benefits of foreign ownership of firms in South Africa.

For the South Africa government, economic growth is a primary objective. If there are secondary firm performance benefits or tertiary spill-over benefits from foreign ownership of local firms, then this could be possibly leveraged by business and the government to ensure efficiency and productivity, in order to create or stimulate growth and job creation in the country's economy.

The existing policy framework on FDI in South Africa places no restrictions on the inward or outward flow of capital (National Treasury, 2011). However, there are some restrictions, and approvals are required on inward investment (the acquisition of local firms) by foreigners in an attempt to balance the long-term benefits of foreign investment and the domestic risks associated with such investment, as was seen in the contested acquisition of Massmart by Wall-Mart, a US-based company in 2011. The reason for such controls, as indicated in the policy discussion document, is to balance

the long-term benefits associated with inward investment with the risks to the economy and to protect the tax base of the country (National Treasury, 2011).

According to the 2010 regulatory restrictiveness index compiled by the Organization of Economic Cooperation and Development (OECD), South Africa was ranked 21st out of the 48 countries measured (see Figure 2). This is a significant improvement from 2007, when South Africa was ranked the seventh most restrictive country out of the 43 countries assessed in that year (Kalinova, Palerm, & Thomsen, 2010).
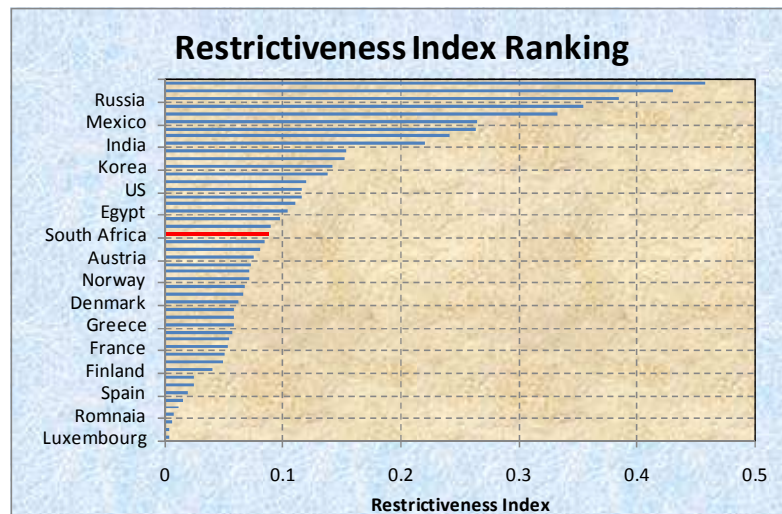
Figure 2: Restrictiveness Index Ranking
(Source: Adapted from Kalinova et al. , 2010)

South Africa maintains a certain level of control over foreign ownership of South African firms. From the drop in the restrictiveness index, it can be seen that this control has been relaxed over the last couple of years. The question then arises whether this possible increase in foreign ownership has benefits at the firm level. This is the question that this study aims to answer by showing the effect of foreign ownership on firm performance and ascertaining whether the theory that it has beneficial elements holds.

1.2 Research Rationale

In 2010, the value of total worldwide FDI reached $1.244 trillion (UNCTAD, 2011). Of this, just over 50% was invested in developing countries. It is also envisaged from the report that the FDI will grow into the future, passing the pre-crisis levels of 2009 of $1.9 trillion in the years to come.

The inflow of FDI in South Africa has increased from levels near zero prior to 1994 to as high as $9.6 billion in 2009, as shown in Figure 3. The net value for 2010 was $1.5 billion.
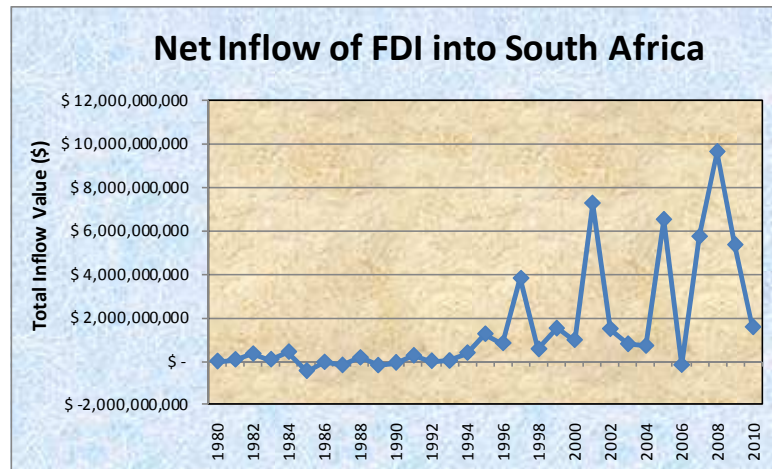
Figure 3: Net Inflow of FDI into South Africa from 1980 *to* **2010**
(Source: IndexMundi (2012*: p.1*))

The $1.5 billion figure for investment in 2010 into South Africa is only 0.12% of the total FDI worldwide spent for the year, so it is clear that there is a high potential for South Africa to increase its use of this source of capital.

As indicated by the theory of FDI and foreign ownership, the benefit for the host economy lies not only in capital investment, but also in the secondary benefit at the individual enterprise level of improved financial performance through access to superior production technology, organisational improvements, better access to technology, better management practices and potentially increased access to foreign markets. There is also a tertiary benefit of spill-over effects to other firms in the economy (a detailed discussion of these effects falls beyond the scope of this research).

For a country such as South Africa, where job creation and growth are essential, the possibility of primary, secondary and tertiary benefits from foreign ownership could have far-reaching policy implications, if the theory of such benefits holds true for the South African context. In that case, the government could implement less restrictive policies to ensure further foreign ownership in the South African economy.

1.3 Research Aim

The aim of this study was to investigate the effect of foreign ownership on the financial and market performance of South African firms and supply empirical evidence of its influence.

The study used traditional financial measurements in the form of Return on Equity (ROE) and Return on Assets (ROA), as well as a more modern ratio, namely Economic Value Added (EVA$^{®}$) to measure the impact of foreign ownership on selected enterprises. Market Growth (MKVAL) was also evaluated to incorporate market movements in the analysis. In addition to the financial and market performance indicators, the study also looked at the effect of foreign ownership on investor returns to develop an understanding of the overall effect of foreign ownership at the firm level.

The value of the study lies in its addition of empirical data at firm level to show whether there is any synergistic effect of foreign ownership in host countries, with specific reference to South Africa.

1.4 Outline of the Study

The rest of the thesis is organised as follow. Chapter 2 will review the literature and empirical data on the subject of foreign ownership and the concepts used in the thesis. Chapter 3 shows the hypothesis of the effect of foreign ownership under investigation with Chapter 4 outlining the methodology used in investigating the hypothesis. Chapter 5 and Chapter 6 show the results and discussion respectively. Chapter 7 provides a conclusion of all the work.

CHAPTER 2:
LITERATURE REVIEW

2.1 Introduction

The literature on corporate finance and international economics has so far achieved only a limited understanding of how foreign ownership affects the performance of local firms (Petkova, 2008). There is a large body of evidence in support of the benefits claimed by the theory, but there is also some evidence that these benefits are not always realised, as will be discussed in section 2.2.2. The topic is highly relevant in today's macro-economic environment, because many governments have policies in place and spend large amounts of resources to draw the maximum foreign investment to their countries due to the perceived benefits of such investment.

Four theories are relevant to the discussion of FDI: foreign ownership theory, agency theory, resource-based theory and institutional theory. Foreign ownership theory claims that foreign-owned firms outperform locally owned firms due to superior monitoring or managerial skills, resource endowment and other skills which are used to their advantage (Douma et al., 2006). This theory relates to the problems and agency costs that arise when there is conflict between the principal (owner) and the agent (manager) due to differences in goals and willingness to take risk, and the associated cost to the principal to monitor the agent (Eisenhardt, 1989). However, according to Douma et al. (2006), this theory only presents a partial view of the relationship. In their study, they included resource-based theory and institutional theory to create a multi-theoretical perspective to achieve a holistic view of the impact of ownership structure on performance. Resource-based theory postulates that a firm's advantage lies in its possession of tangible and intangible resources (Douma et al., 2006). Institutional theory introduces the effect of the social and regulatory environment on the firm structure and performance. In line with the work done by Douma et al. (2006), this study used a multi-theory base approach.

The review of prior literature on the topic of foreign ownership and its effect covers the following:

- Foreign ownership: The review looks at how foreign ownership is defined and how it is grouped in the literature. It also covers the benefits and drawbacks of foreign ownership highlighted in the literature.

- Foreign direct investment (FDI) as a source of foreign ownership: The link between foreign investment and foreign ownership is traced in the literature. The literature review also covers the value of FDI.
- Foreign ownership and firm performance: The literature on firm-level performance of foreign ownership or secondary benefits is reviewed.
- Foreign ownership and the spill-over effect: The tertiary benefits of foreign ownership are examined for completeness.
- Industry sector impact: The effect of the industry sector on a firm's performance under foreign ownership is discussed.
- Ownership and agency theory: The possible link between foreign ownership and agency theory is explored.
- Market and financial performance indicators: The methods to measure firm level performance are discussed.

2.2 Foreign Ownership

One of the most important characteristics of corporations today is the separation of ownership and control (Uwalomwa & Olamide, 2012). Corporations and listed companies are controlled by managers and professional executives, who only own a small fraction of the company through shares. The ownership generally lies with a completely separate entity. The owners could be any individual, group of individuals or corporations (Uwalomwa & Olamide, 2012).

Foreign ownership is defined as share holding by nationals outside the country of origin in local firms (OECD, 1999). According to the definition of foreign ownership, any share holding by a foreign national is seen as foreign ownership; however, the level of influence of shareholders on firms may differ:
- if the foreign ownership is greater than 25%, it is seen as a major subsidiary and could constitute influence on the firm (JSE, 2008); and
- if the foreign ownership is 50% plus 1, then it is a subsidiary ownership and this constitutes full control – the holder can dictate policies and management direction.

Douma et al. (2006) disaggregate foreign ownership levels into two categories, namely foreign institutional and foreign corporate ownership. They argue that the governing dynamics are vastly different for these two types of ownership models. Institutional owners are more concerned with the short-term returns that a firm can offer. They are

more interested in their profitable exit strategy than in getting involved with management and, in most cases, do not take an active part in transferring any management or technology skills (Douma et al., 2006). Corporate shareholders or owners may be more inclined to become involved in a long-term relationship, and therefore take a more active role to ensure the profitability and productivity of a firm by developing a sustainable competitive advantage (Aguilera & Jackson, 2003).

The theory of foreign ownership and FDI postulates many benefits from foreign ownership to the host country. Note that the terms "foreign ownership" and "FDI" are often used interchangeably in the literature, as the definitions are very similar (Mihai, 2012). The benefits can be loosely grouped as primary, secondary and tertiary benefits. The primary benefit is seen as the inflow of capital into the host country (Chari et al., 2009). The secondary benefit is improved firm performance due to the assumed superior management and technology access arising from the connection to the investing firm or investor. There are also tertiary benefits in respect of higher wages, productivity increases and research and development (R&D) (Basti & Akin, 2008). These tertiary benefits have a spill-over effect from the firm level to the industry of the host economy (Gorg & Greenaway, 2004).

2.2.1 Foreign direct investment (FDI) as a source of foreign ownership

According to Ecer, Ulutagay, and Nasiboglu (2011), the most important aspects of a firm in today's global world are performance and competitiveness. They argue that therefore firms either merge, issue license agreements or form partnerships to stay competitive, and they may use FDI as an alternative strategy.

FDI is defined as follows by the OECD (1999, p.7):

> "Foreign direct investment reflects the objective of obtaining a lasting interest by a resident entity in one economy ("direct investor") in an entity in an economy other than that of the investor ("direct investment enterprise"). The lasting interest implies the existence of a long-term relationship between the investor and the enterprise and a significant degree of influence on the management of the enterprise."

In terms of the definition of FDI, all foreign ownerships fall under FDI. It has been said that much of today's FDI takes the form of mergers and acquisitions of firms across the world (Head & Ries, 2008).

The primary benefit of FDI is clearly defined in the literature as a major source of finance for a country (A. Chari et al., 2009; Moolman et al., 2006; Ngowi, 2001). In addition, the secondary and tertiary benefits, which include job creation, transfer of technology, better management practices and increased access to foreign markets are also highlighted (Lipsey, 2004; Ngowi, 2001). Sridharan, Vijayakumar, and Chandra (2009) found in their research on the effect of FDI on growth in Brazil, Russia, India, China and South Africa (the BRICS countries) that the host country can gain economic development from FDI, due to the benefits of improved productivity and exports.

FDI investments can take three main forms (Dahl, 2002):
- equity capital – shares purchased in a country other than the investor's own;
- reinvesting earnings – dividends are not paid out but reinvested; and
- intra-company loans – short- or long-term loans.

In developing countries there is a major drive from governments to attract FDI by offering tax breaks, incentives and reduced tariffs, as FDI is seen as a necessity for growth (Dahl, 2002; Lipsey, 2004). From the World Investment Report (UNCTAD, 2011), and as shown in Figure 1, it is clear that the total world FDI has increased exponentially over the last 30 years.

An interesting shift observed in the last years is the increased FDI spent in developing and transition economies (UNCTAD, 2011) – over 50% of FDI was spent in these economies for the first time in 2010. Among the top five receiving countries of FDI there are now three developing economies: China, Hong Kong and Brazil (see Figure 4).
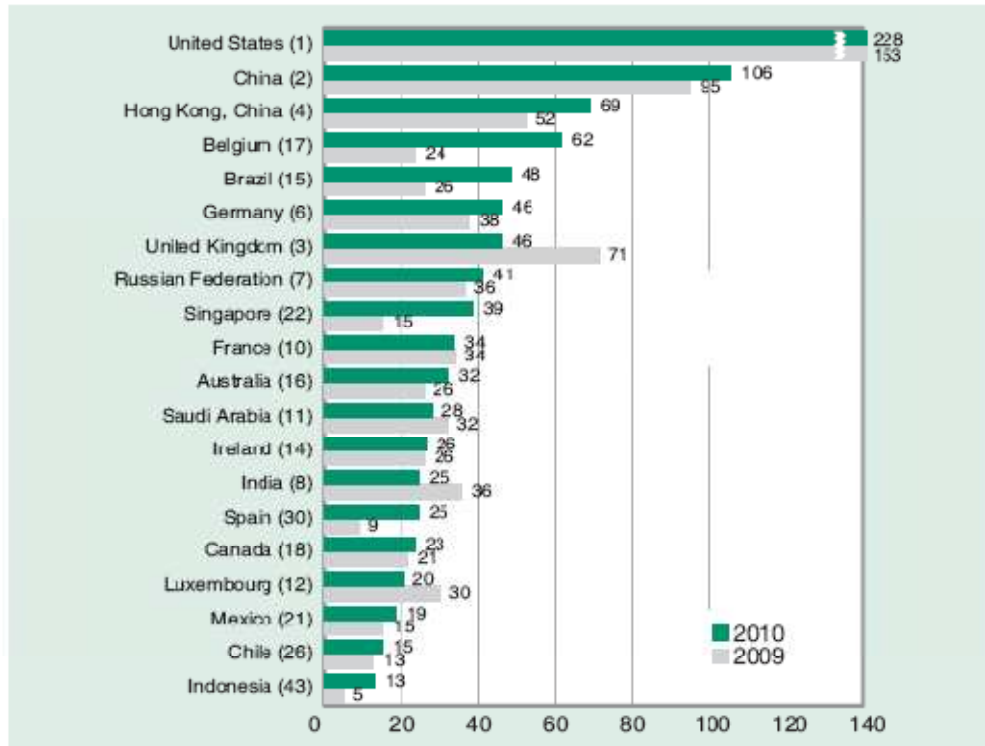
Figure 4: Top 20 FDI-receiving Countries Worldwide

(Source: UNCTAD, 2011, Chapter 1, p. 4)

Although South Africa has attracted a significant increase in FDI spending since 1994, it has received only $1.5 billion (less than 0.12%) of the world's overall FDI spending (IndexMundi, 2012). The question then arises what makes a country attractive as a candidate for FDI. Dahl (2002) highlights ten common criteria cited in the literature as characteristic of the top FDI-receiving countries in the developing world:

• they belong to a regional group;

• their economic growth exceeds their population growth;

• they have access to foreign markets;

• they have a skilled primary work force;

• their low-skilled labour is available at low cost;

• they have a high GDP;

• they practise fiscal discipline;

• their corporate tax structure is well established; and

• there is political stability.

These attributes can be condensed into three conditions that need to be fulfilled for FDI to occur (C. Wang, Clegg, & Kafouros, 2009):

- there must be an ownership-specific advantage, such as proprietary assets;
- there must be advantages from the host country, for example, in the form of tax breaks, labour, market, or other benefits that may be industry-related, such as access to ore bodies for the mining sector; and
- there must be a superior commercial advantage at the intra-company level to be able to exploit the above two areas.

In their study on the effect of FDI on the BRICS countries, Sridharan et al. (2009) found that for South Africa, Brazil and Russia, there is a bi-directional influence; in other words, FDI causes growth and growth is enhanced by FDI, as postulated by theory.

2.2.2 Foreign ownership and firm performance

When a firm invests in a foreign entity, it does so with the intention of creating more wealth for its shareholders, and this wealth creation must be at a higher rate than it could achieve at home (Gorg & Greenaway, 2004). The advantage the investing firms have in the host country will therefore not simply be handed over to local firms, as these advantages are the source of the FDI firms' competitive advantage. Hence, it can be expected that these firms will need to show increased performance, compared to their local competitors (Gorg & Greenaway, 2004).

A number of studies have looked into the effect of foreign ownership and firm performance. To date, although many studies have empirically shown the benefits of FDI, there has not been a definitive answer as to whether the theory is correct in its assumption that foreign ownership results in better performance. Gurbuz and Aybars (2010) attempted to provide some explanation of why the literature is divided on the veracity of the theory. They analysed a number of studies to establish the four main reasons why some studies fail to show the benefits of FDI. Firstly, the cost of internalization has been ignored in many studies. Secondly, the individual strategies of each firm add to the complexity of the topic. Thirdly, diversification strategies affect the performance of individual firms. Lastly, there seems to be a threshold in the degree of internalization, where after there is no further benefit.

Gelübcke (2011) explains that the quantification of the effect of foreign ownership as postulated in the theory is difficult, because results are highly dependent on country-

specific factors. Hence, the focus has in recent studies has shifted to gathering empirical data based on country-specific analyses.

The literature also comments on problems with establishing empirical evidence to confirm the theoretical benefits (Jung, Beamish, & Coerzen, 2008; Tam & Tan, 2007). Tam and Tan (2007) refer to differences in socio-economic policies, laws, regulations and operating environments as reasons for variances. In addition, they argue that, if managers maximise shareholder value, then the ownership structure will not have any impact on the firm value. This view is similar to that of a prior study by Demsetz and Villalonga (2001), who maintain that if market forces were perfect, there would be no relationship between performance and ownership. This postulation lies within the domain of agency theory and is discussed in more detail later (see Section 2.4).

The evidence surrounding the performance impact of foreign ownership is discussed in detail in the remainder of this section. Many studies have empirically proven that foreign ownership has a positive impact on a firm's performance (Chhibber & Majumdar, 1999; Douma et al., 2006; Ecer et al., 2011; Gelübcke, 2011; Gurbuz & Aybars, 2010; Halkos & Tzeremes, 2011; Love, Roper, & Du, 2009; Ongore, 2011; Uwalomwa & Olamide, 2012).

Douma et al. (2006) reviewed 1 005 Indian companies from various sectors for the 1999-2000 financial year. The empirical results from their study showed foreign firms' financial performance to be superior to that of the locally owned firms with regard to the chosen financial indicators, namely ROA and Tobin's Q. They found that corporate ownership was significant in terms of both measures, and that institutional or investor ownership was only significant in terms of Tobin's Q. From this, they concluded that institutional owners may prefer to invest in firms that already produce better market returns, which implies a reverse causality.

Halkos and Tzeremes (2011) used a "*Data Envelopment Analysis*" technique to measure the performance difference between 353 foreign-owned Small to Medium Enterprises (SMEs) in the Greek manufacturing sector. They found that foreign ownership had a positive impact on the financial performance of these firms.

Gelübcke (2011) found empirical evidence in the German manufacturing sector that foreign ownership led to improved productivity, Research and Development (R&D), export intensities and higher wages. However, he could not find any evidence of

differences in terms of increased profitability between the locally owned and foreign-owned firms. He concluded that the interpretation of the empirical data could have introduced possible inaccuracies.

Ecer et al. (2011) investigated whether foreign ownership affected the financial performance of the top 500 industrial firms in Turkey between 1993 and 2009. Unlike other research during the period, they did not review the complete economy, but broke the Turkish industrial sector up into 12 segments. They used profit as the dependent variable. Their analysis indicated that foreign ownership had a significant positive effect on four of the sectors, and a negative effect on the other eight. Their main conclusion is that the heterogeneity of sectors influences the results if the sectors are grouped together.

Chhibber and Majumdar (1999) reviewed the correlation between foreign ownership and the profitability of firms operating in India. They used ROA and returns on sales as proxies for profitability. From the empirical evidence, they concluded that if the shareholding exceeds 51%, a controlling stake, foreign ownership increases profitability.

Love et al. (2009) tested the relationship of innovation, ownership and profitability on Irish and Northern Irish manufacturing plants. They found that a positive relationship with regard to innovation, where foreign-owned plants outperformed locally owned plants. They also found that UK/US-owned plants had increased profitability compared to non-UK/US-owned plants. However, they noted that the heterogeneity of the profitability data could have influenced the results. In this regard, accounting differences could have played a role, in the sense that if non-local plant owners did not allocate costs, sales, taxes and profits to the Irish plant, it could lead to accounting discrepancies.

Gurbuz and Aybars (2010) used a panel data analysis method to review 205 non-financial listed companies in Turkey, covering the period from 2005 to 2007. They found that, on average, for the chosen performance indicators of Earnings Before Interest and Tax over Total Assets (EBIT/TA) and ROA, the level of foreign ownership increased firms' financial performance to a certain level. When the foreign owner became the controlling owner, this benefit fell away and locally owned firms performed better. Some of the reasons suggested for this finding was that foreign owners bring additional "*know-how, skills and technologies*" (Gurbuz & Aybars, 2010, p. 358) to the

firm. However, because of unique ways of doing business in Turkey, these benefits fell away if the domestic relationship was broken at the point when the foreign entity took a controlling stake. These findings differ from those of Chhibber and Majumdar (1999) in their review of performance in the Indian context.

Uwalomwa and Olamide (2012) investigated the effect of foreign ownership on profitability, using ROA as the proxy, in 31 Nigerian listed firms from 2006 to 2010. They found that both foreign ownership and institutional ownership had a significantly positive influence on firms' performance. In the case of foreign ownership, the benefit arose from the managerial efficiency, technical skills and technology that the foreign owners bring to the firms. In the case of institutional ownership, the benefits were due to the monitoring role of the institutional investor.

Most of the studies attribute any positive relationship or benefits to the access of foreign owners to technology and superior management skills. However, in his study of listed companies in Kenya, Ongore (2011) attributed the positive relationship between foreign ownership and performance not only to management efficiencies and resources, but also to the ability of foreign firms to leverage their global operations to assign costs to high tax regimes and profits to low tax regimes.

There is also some empirical work showing negative relationships or indifferent relationships (Globerman, Ries, & Vertinsly, 1994; Jiang, 2007; Konings, 2001; Mihai, 2012; Petkova, 2008). Some of these are discussed below.

Globerman et al. (1994) studied the economic performance of foreign-owned and locally owned firms in Canada. On the basis of their empirical work, they concluded that there was no difference in performance between the two ownership models once they had corrected for company size and capital investment.

Jiang (2007) reviewed the effect of foreign ownership on the performance of Chinese listed firms between 2000 and 2004. He found no relationship between foreign ownership and firm performance in the Chinese context. He postulated that the reason for this was that foreign owners have rights to the assets, but no or limited voting rights over strategic issues.

A number of studies focused on Eastern Europe. Konings (2001) looked at three emerging economies from Eastern Europe to establish a link between foreign

ownership and performance. The results were negative for Romania and Bulgaria, showing that foreign-owned firms did not perform better than locally owned firms. A positive relationship was, however, shown for Poland. Petkova (2008) reviewed the firm performance of 1 600 Indian firms between 2001 and 2008 to establish the effect of foreign ownership. She found no evidence of operating performance differences between foreign-owned and locally owned firms in the short or medium term.

Mihai (2012) evaluated 63 firms in Romania to establish any possible foreign ownership and local ownership links to profitability. He used ROE and ROA as his financial indicators, but found no evidence of any positive or direct links between the two variables.

Earlier in the chapter, some of the reasons for the theory's failure to reflect the actual situation were shown. There are two further aspects that could affect the results and that therefore warrant some discussion.

First, the technology distance between the host and investor economies could influence the results. Finlay's Model explains that the greater the technology distance between two economies, the greater the opportunity would be for the foreign investment in the local economy, due to greater speed in the uptake of new technology (Gorg & Greenaway, 2004). In line with this model, Ford, Rork, and Elmslie (2008) have shown empirically that growth in a firm via technology transfer depends on the technology distance between source and host countries. Glass and Saggi (1998) see the technology distance differently – they argue that if the technology gap is too wide, it is not likely that the host country can support the investment, due to a lack in human capital, infrastructure and distribution networks. The quality of the host benefits therefore diminish as the technology gap increases. It is therefore important to understand that the technological or economic gap between the two countries, the foreign investor and the local receiving firm, can influence the actual benefits received from foreign ownership.

Second, the country of origin can also have an effect on the transfer of the benefits, according to the theory. Chen (2010) has provided empirical data to show that the post-merger performance of US firms in the US is influenced by the acquiring entity's country of origin. His findings suggest that the restructuring and performance of a firm after acquisition is highly dependent on the origin of the foreign owner.

In the literature, there is also additional reference to the fact that the reasons for investing and ownership advantages vary significantly between various countries from whence the investment originates (Dunning, 1988; Globerman et al., 1994; Hake, 2008; C. Wang et al., 2009). These differences are highlighted by Gelübcke (2011), who shows that there is a significant difference in the German manufacturing sector between US affiliates regarding higher productivity and export intensity on the one hand, and European affiliates on the other. He also shows that European affiliates pay lower average wages than their US counterparts (Gelübcke, 2011). Although this is an indication of differences between investing countries, his findings cannot be extrapolated to the financial performance differences of firms. C. Wang et al. (2009) have found that the country or region of origin has a significant effect on the behaviour of investors. They showed that Western countries targeted local markets, whereas Eastern countries such as Hong Kong and Taiwan were more export-oriented. Similarly, Ford et al. (2008) showed in their study of foreign investment into the US that between 1978 and 1997, Japanese FDI had a more significant effect on growth than Swiss FDI. Similarly, Love et al. (2009) found in their review of Irish and Northern Irish firms that there is empirical evidence that the profitability of UK/US-owned firms was superior to that of firms that were externally owned by non-US investors.

Despite the vast amount of literature supporting the country of origin theory, there is also evidence that disproves the theory. Ghahroudi (2011) has shown in an empirical study of Japanese firms that there were no performance influence effects based on the country of origin.

2.2.3 Foreign ownership and spill-over effects

According to theory, foreign-owned firms can benefit the local economy through direct firm performance improvements. It can also benefit the local economy through the spill-over effects of the benefits they bring to individual firms.

Gorg and Greenaway (2004) suggest that foreign firms set up business in other countries as a method to protect their competitive advantage, which could be related to a brand, technology or marketing. However, over time, these benefits could spill over into the host country's economy via four possible routes (Gorg & Greenaway, 2004; Javorcik, 2004). The first is imitation or reverse engineering – it is not only products that can be imitated, but also management practices and strategy. The second is skills

acquisition – workers move around and thus skills and knowledge are transferred. This would be especially true for knowledge workers (graduates and professionals), who are much freer to move between organisations due to their skills level (Lamb & Sutherland, 2010). The third way in which spill-over can occur is through competition – as foreign-owned companies improve products or reduce costs, it drives local companies to improve their offerings. The fourth way is exports, because foreign-owned companies set up networks which local companies exploit or learn from. In addition to the firm productivity benefits, the literature also highlights other benefits, for example, better wages and knowledge transfer.

In a paper on the host country effects of FDI in the form of ownership, Lipsey (2004) points out that most studies show that most foreign-owned companies pay higher wages, for four reasons. Firstly, they may be forced to do so by local regulations. Secondly, employees may prefer to work for locally owned companies; therefore, a higher wage is required to draw employees to the foreign-owned firm. Thirdly, higher wages reduce labour turnover, as they may have technology benefits which they would like to keep secret for as long as possible. Finally, because they are not familiar with the local labour market, they may pay more to attract high quality labour. However, in the literature, the evidence of the spill-over of higher wages to locally owned firms was inconclusive. Lipsey (2004) also found that the evidence of productivity increases in foreign-owned firms was substantive, but that the evidence on spill-over effects was limited.

Gorg and Greenaway (2004) reviewed various empirical studies conducted over the last 30 years on the spill-over effects of productivity arising from foreign ownership. In Table 1 (below), the results of the literature review of studies on productivity differences between locally owned and foreign-owned firms on spill-over are summarised. It is postulated that for any spill-over to occur, the foreign-owned firm must demonstrate some advantage. The results show that there is a large body of work showing positive spill-over effects to locally owned firms.

Table 1: Summary of Findings on Productivity Spill-over from Foreign-owned Firms to Locally owned Firms

Finding	N – Quantity	% Distribution
Positive Influence	19	47.5%
Negative Influence	3	7.5%
Statistically Insignificant*	18	45%
Total	40	100%

* Some of these studies showed a mixture of positive, negative and insignificant results for different countries analysed in the study, but in this summary they are seen as one study.
(Source: Adapted from Gorg and Greenway, 2004)

However, there are several studies that suggest that the spill-over or secondary benefit from foreign ownership is negative or not statistically significant. Similar results were found with regard to vertical spill-over through suppliers and clients, and also with regard to increased wages. In this respect, Gorg and Greenaway (2004) summarise that there are only limited evidence of positive spill over effects.

In a study of 2 500 to 4 000 Lithuanian manufacturing firms, Javorcik (2004) found evidence of positive spill-over, due to backward integration through interaction with suppliers. However, his study found no evidence of spill-over between sectors, which suggests that benefits do not filter through the whole economy.

Globerman et al. (1994) did a study of the performance effects of foreign ownership in Canada. They found that the efficiency and income levels of firms in Canada benefited from FDI, because foreign-owned firms tend to pay higher wages.

Foreign ownership is not always beneficial – some drawbacks have been highlighted in the literature. There is a school of thought that has raised debate around the possibility that foreign investment can be an obstacle to long-term growth, as investors exploit local resources in the short term at the cost of national growth in the long term (Fan, 2002; National Treasury, 2011). Lipsey (2004) asks whether the investment made by governments in order to attract foreign investors is worth the return, in view of limited empirical proof of economy-wide benefits.

2.3 Industry Sector Analysis

In the prior literature cited above, the research was conducted predominantly on economies as a whole, with little if any separate consideration the various industries in the wider context of the economy. Some of the results may be misleading, as the

effects of different sectors' or industry behaviour within the economy may mask the actual trends (Ecer et al., 2011). This problem regarding the findings is referred to as an aggregate bias. Ecer et al. (2011) disaggregated the Turkish economic environment into nine sectors or industries. They found that foreign ownership had a positive financial impact on four of the industries, and a negative impact on the remaining five. A similar finding was reported by Ford et al. (2008), who reviewed the impact of investment from various countries in the United States. They found that there was a significant difference between Japanese investment in US companies and Swiss investment. The Japanese investment reported higher returns. However, in his conclusion, Ford et al. (2008) warn policy-makers that they should not necessarily use the results of the study as a basis for starting to target Japanese FDI only, because Ford et al.'s (2008) study did not disaggregate the industries, and Swiss FDI could be in fact be beneficial in certain sectors.

The reason for this difference could be a form of Finlay's Model from a country level to an industry level. Some sectors within economies may be more susceptible to performance improvements resulting from foreign ownership because the performance, technology or development gap may be large enough (and not too large), whereas other sectors are more developed and may therefore fail to benefit from FDI at a secondary level (Gorg & Greenaway, 2004).

2.4 Ownership Models and Agency Theory

Most of the research into ownership models and performance has been developed in the agency theory domain. Agency theory, as postulated by Jensen and Meckling (1976), holds that there is conflict between the principal (the shareholder) and the agent (the manager), because these entities have different goals and risk appetites. They also argued that large shareholders can monitor managers better, as they can afford the monitoring costs, and they can influence decisions through voting power. The work by Jensen and Meckling (1976) built on the pioneering work by Berle and Means (1932), who predicted that the separation of ownership and control would affect the performance of firms adversely (Berle & Means (1932), cited in Ongore (2011)).

In his Master's thesis, Laiho (2011) analyses how benefits derived from large shareholders can positively influence performance. He also highlights the benefits of concentrated ownership on foreign owner's monitoring ability to reduce agency cost as

well as their ability to influence strategy. It is also postulated that foreign owners are more likely to demand better control of and by the managers to avoid poor behaviour and performance, thereby ensuring better control at a lower agency cost (Laiho, 2011).

Ang, Cole, and Lin (1999) studied 1 708 small corporations in the US to determine agency cost and ownership structure. They showed empirically that as the concentration of non-manager shareholders increases, the agency cost increases. Conversely, the more concentrated the ownership, the lower the agency cost.

Uwalomwa and Olamide (2012) found that institutional ownership had a significantly positive influence on firm performance, due to the monitoring role of the institutional investor.

Zeitun and Tian (2007) reviewed 59 companies in Jordan to investigate the effect of ownership structure on performance. They used three financial indicators for financial performance, namely ROE, ROA and the Market to Book Ratio (MBR). They found that ownership concentration was positively related to performance, but that the relationship was not linear.

There has been some criticism of agency theory, which has been challenged by several researchers who could not show that the link between concentration of ownership and firm performance is significant (Demsetz & Villalonga, 2001; Singh, Davidson, & Wallace, 2003). Demsetz and Villalonga (2001) are very critical of previous studies that claim there to be a relationship between ownership structures and performance. They argue that such results are biased because the prior researchers used single equations in their models, and did not take into account the complexity of interests in an ownership structure. Their study used two models (one to correct for the top shareholders and one to correct for the management share or influence) and could find no clear relationship between ownership and performance. In a study of Kenyan firms, Ongore (2011) found that there was a significant negative relationship between ownership concentration and firm performance in the Kenyan context.

2.5 Market and Financial Performance Indicators

The profitability of a firm refers to the difference between the revenue received and the cost incurred in creating the revenue (Carden, 2009). Many ratios have been used in

the literature to describe the financial performance of firms. Return on Equity (ROE) and Return on Assets (ROA) are the two financial ratios featured most extensively in the prior research related to the current topic (Ongore, 2011). Another relatively new financial indicator, which its originators claim indicates true performance, in use since the mid 1990s, is Economic Value Added (EVA$^®$). These measures are discussed below.

2.5.1 ROA and ROE

ROA measures the efficiency of producing profits per unit of asset (Johnson & Soenen, 2003). This is a proxy for how well management uses the assets the firm has to produce returns. The ratio is calculated as follows (Higgins, 2009, p.41):

$$ROA = \frac{Net\ Income}{Total\ Assets}$$

Where:

Net Income   = *Income reported on the income statement of the firm*
Total Assets   = *Total assets reported on the balance sheet of the firm*

ROE measures the earnings generated from using shareholders' equity in the firm. It is a ratio of how well management is managing profitability, assets and financial leverage (Ongore, 2011). The ratio is calculated as follows (Higgins, 2009, p. 38):

$$ROE = \frac{Net\ Income}{Total\ Equity}$$

Where:

Net Income   = *Income reported on the income statement of the firm*
Total Equity   = *Total equity as reported in the balance sheet of the firm*

The difference between the two ratios is that the ROA calculates the profit as a percentage of equity and the debt used in the business, whereas ROE only looks at the equity provided by the shareholders or owners (Higgins, 2009).

Conventional financial measures are often criticized for the limited level of accuracy in their reporting of the firm's financial performance, due to the accrual-based accounting

conventions used by firms (Anderson, Bey, & Weaver, 2004; Sharma & Kumar, 2012). The financial reporting methods vary significantly between firms within the parameters prescribed by the financial accounting practices employed, such as the Generally Accepted Accounting Principles (GAAP) method. In addition, traditional financial ratios such as ROE and ROA do not take into account the amount of capital that is employed by the firm to create the revenue (Kaur & Narang, 2009).

Notwithstanding some of the limitations of conventional financial ratios noted in their study of the co-determination of firm-industry interaction and firm performance, ,Eriksen and Knudsen (2003) used ROA as their measure of profitability because they believed it to be the most consistent measure of profitability available. Similarly, Hake (2008) used ROA in her assessment of the impact of the origin of investment on financial performance, stating that it has been found by previous studies to be strongly correlated to economic return.

2.5.2 EVA®

Economic Value Added (EVA®) is a financial term developed by Stewart and Stern from the company Stern Stewart & Co (Bibble, Bowen, & Wallace, 1999). The term deals with the earnings created by a firm to cover the capital invested to create the earnings in the first place (L. Chari, 2009; Kaur & Narang, 2009). EVA® is claimed by Stewart, its inventor, to be the most accurate performance measure of a firm's profit (Anderson et al., 2004; Sharma & Kumar, 2012).

Anderson et al. (2004) list three differences between accounting ratios and EVA®, the first difference is that it incorporates operating and asset management into one value. The second difference is that EVA® includes the cost of capital used at a rate equal to that of the expectation of the investor. Finally, EVA® is corrected to eliminate variances in the accounting methods used.

EVA® corrects for managerial actions where managers possibly want to boost profits at the expense of shareholder wealth (Bibble, Bowen, & Wallace, 1999). EVA® is regarded as a leading example of an "attempt to measure an underlying concept called residual income" (Biddle et al, 1999, p.70). This residual income is the value that is left after the shareholders have been paid their share of the profit from their investment (Stern, Stewart, & Chew, 1995). If EVA® is positive, it means the firm has created

wealth in excess of expectation. If EVA® is zero, then the company has produced enough revenue to reward its shareholders at the expected rate. If EVA® is negative, then it means the company destroyed wealth and cannot reward its shareholders for the risk taken (Kaur & Narang, 2009).

Some of the main claims in support of EVA® are summarized by Sharma and Kumar (2010):

- EVA® improves decision-making;
- EVA® is more associated with stock returns than any other measure;
- EVA® improves stock performance;
- EVA® adds more information to explain stock movements; and
- EVA® is highly correlated to market value.

The formula for EVA® is (Kaur & Narang, 2009, p. 41):

$$EVA = NOPAT - WACC \times Economic\ Capital$$

Where:

NOPAT	= Net operating profit after tax
WACC	= Weighted average cost of capital
Economic capital	= Economic book value of assets, equity and debt

WACC is calculated as follows (Bacidore, Boquist, Milbourne, & Thakor, 1997, p. 15):

$$\text{WACC} = \frac{Dm}{Dm + Em} kd(1 - T) + \frac{Em}{Em + Dm} ke$$

Where:

D_m	= Market value of firms total debt
E_m	=Market value of firms total equity
k_d	= Pre-tax of cost of debt
k_e	= Cost of equity
T	= Marginal tax rate

The cost of debt is taken as the after-tax cost; and the cost of equity (k_e) is calculated as follows (Sharma & Kumar, 2010, p. 201):

$$ke = Rf + \beta(Rm - Rf)$$

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Where:

R_f = *Risk-free return*

R_m = *Expected market return*

$β$ = *Risk coefficient of firm*

The WACC is seen as the most important aspect of EVA®, because WACC implies that managers must pay for their capital (Sharma & Kumar, 2010). This aspect is missing from traditional corporate finance ratios and measures, as Sharma and Kumar (2010) point out: "Until a business returns a profit that is greater than its cost of capital, it operates at a loss. Never mind that it pays taxes, as if it had a genuine profit. The enterprise still returns less to the economy than it devours in resources…until then it does not create wealth; it destroys it" (Drucker, 1995, p. 59, quoted in Sharma & Kumar, 2010, p. 201).

EVA® is different from other accounting methods in that it makes adjustments to accounting data to convert the information to economic value by removing the anomalies created by accounting principles such as GAAP (L. Chari, 2009). According to Kaur and Narang (2009), there are 164 possible adjustments to EVA®, but only around eight to ten have been shown to be truly significant. Indeed, L. Chari (2009) agrees with this and claims that only five to six adjustments are significant. According to Stern Stewart, the typical adjustments to account or correct for distortions should be the following (Bibble et al., 1999; L. Chari, 2009):

- Marketing and R&D costs should be recorded as an asset and amortized, and should not be recorded as an expense;
- deferred tax is normally reported as an asset or liability, but should be reversed to reflect cash basis reporting;
- purchased goodwill, normally is recorded as an asset and amortized, but the amortization should be reversed to show the original value;
- operating leases are charged as an expense, whereas they should be recorded as an asset and amortized with the recording of the liability and reflected interest;
- in the case of bad debt and warranty cost, normally the accrual is estimated, whereas it should be reversed to reflect cash base reporting;
- in last in, first out (LIFO) inventory costing, in accounting, LIFO is permitted, but it should be changed to first in, first out (FIFO);
- construction in progress is normally recorded as an asset, whereas it should be removed; and

- discontinued operations are included in assets and earnings in accounting, whereas it both should be removed.

Stern Stewart's reasoning behind these adjustments are summarized by Bibble et al. (1999) as, first, reducing incentives for non-optimal decision-making; second, representing the economic impact of accounting better; third, improving comparability across firms and business units.

Some studies also present critiques of the EVA$^®$ technique. Some studies reported a lack of evidence of an improved link between EVA$^®$ and firm performance. It was found that in fact that EVA$^®$ does not perform better than any of the traditional measures (Weaver, 2001). Bibble et al. (1999) found that net income is more relevant to explaining firm value than EVA$^®$. Anderson et al. (2004) stress that larger companies appear to perform better when EVA$^®$ is used as a measure, as EVA$^®$ is biased towards company size. In their review of 1 000 top-performing companies from the Stern Stewart & Co clients list ranked on Market Value Add, Ferguson, Rentzel, and Yu (2006) found that when an adjusted EVA$^®$ was used to predict share performance, the bottom-performing group consisted of small-sized companies. This supports to the argument that EVA$^®$ is biased toward larger companies.

In the calculation of EVA$^®$, there are 164 adjustments that can be made to correct the profit, invested capital and cost of capital (Kaur & Narang, 2009; Weaver, 2001). In a study by Weaver (2001) of 29 Stern Steward & Co clients, he found that each of the respondents calculated EVA$^®$ differently. Weaver (2001) found that, on average, these companies made 19 adjustments, with a spread ranging from seven to 34. Due to these differences, it was found that EVA$^®$ has limited value in comparative analysis, because it is highly dependent on the accounting measures used. To add to the confusion, adjustments on EVA$^®$ are not generally published, making interpretation even more difficult (Anderson et al., 2004). It can be stated from the literature that there is no universal set of adjustments or a single application method to calculate EVA$^®$ (L. Chari, 2009).

In the literature, there is also some division between the evidence on EVA$^®$ between developed and developing countries – Sharma and Kumar (2010) did a detailed literature review on EVA$^®$, and found that in developed countries there is a large evidence base supporting the use of EVA$^®$. By contrast, in developing countries, there are fewer studies supporting the use of EVA$^®$.

Some of the negative aspects relating to EVA® summarized by L. Chari (2009) are the following:

- it is not more value-adding than earnings (see also Bibble et al., 1999);
- It is not inflation-adjusted; and
- it is biased against growth (Johnson & Soenen (2003) formulated the same critique of EVA® in their research of indicators for successful companies).

L. Chari (2009) also found no empirical evidence that the adjusted EVA® economic values are more correct than the accounting values.

2.5.3 Market value growth

In addition to financial ratios, market ratios can also be used to evaluate a firm's performance.

The market-based performance of a firm can be calculated as the Growth in Market Value (MKVAL) as follow (Shim & Lee, 2003, p. 78):

$$MKVAL = \frac{Market\ Value(t) - Market\ Value(t-1)}{Market\ Value(t-1}$$

In this equation, *Market Value* is defined by:

$$MKVAL = (Closing\ Share\ Price) \times (Common\ Shares\ Outstanding)$$

2.6 Summary

It is clear from the literature review in this chapter that there is some empirical evidence of the positive effects of foreign ownership on the performance of a firm, thereby supporting the theory that foreign ownership leads to superior performance. There is, however, also a considerable amount of empirical evidence that shows that the theory does not always hold true, either because benefits were not shown to be significant or because negative relationships were found.

One of the reasons given for the failure of the theory is the influence of the operating environment and its effect on the ability of foreign owners to transfer the assumed

benefits. Another reason could be an aggregate bias, since most of the studies reviewed looked at firms' performance in the economy as a whole. Evidence showed that the operating environment is not only different for every individual country's economy, but also for individual sectors within a particular economy.

With regard to the ratios that can be used to assess the benefits, in addition to using traditional financial models to review firm performance, it has been shown that more modern measures such as EVA$^®$ would be helpful, as EVA$^®$ is not linked to the limitations of accounting differences, unlike the traditional ratios.

This study therefore set out to establish whether the claims of benefits from foreign ownership hold true for the South African operating environment, using prior research on foreign ownership as a basis.

CHAPTER 3:
RESEARCH HYPOTHESES

3.1 Introduction

This chapter sets out the four research hypotheses tested in this study. These hypotheses emerged from the research aims set out in Section 1.3 and the literature review in Chapter 2.

Hypothesis 1 focuses on the aggregate South African firms and answers the question of whether foreign-owned firms in South Africa perform differently from locally owned firms. South African firms were analysed using the following financial and market ratios:

- Return on Assets (ROA);
- Return on Equity (ROE);
- Economic Value Added (EVA®); and
- Growth in Market Value (MKVAL).

The aggregate foreign ownership sample was disaggregated according to two types of foreign ownership, namely foreign institutional and foreign corporate ownership. The two ownership models were reviewed separately, because, according to the literature, their influence is different. This split is reflected in Hypotheses 2 and 3.

Hypothesis 2 focused on foreign-owned institutional firms in South Africa and how they perform against locally owned firms. They were analysed using the same financial and market ratios used to test Hypothesis 1.

Hypothesis 3 focused on foreign-owned corporate firms in South Africa and how they perform against locally owned firms. They were analysed using the same financial and market ratios used to test Hypothesis 1.

Hypothesis 4 focused on how investors value firms in respect to their foreign ownership influence by looking at the returns created from share price movement and dividends paid.

3.2 Hypothesis 1

Hypothesis 1 states that foreign-owned firms in an aggregate sample display superior performance to similar locally owned firms.

This hypothesis was tested on three financial measures and one market measure.

a) *Hypothesis 1a*

The null hypothesis states that there is no correlation between the average ROA of locally owned firms (LOC_{ROA}) and the average ROA of foreign-owned firms (FOR_{ROA}). The alternative hypothesis states that there is a significant difference between the average ROA of locally owned firms (LOC_{ROA}) and the average ROA of foreign-owned firms (FOR_{ROA}).

H_0: $FOR_{ROA} - LOC_{ROA} = 0$
H_a: $FOR_{ROA} - LOC_{ROA} \neq 0$

b) *Hypothesis 1b*

The null hypothesis states that there is no correlation between the average ROE of locally owned firms (LOC_{ROE}) and the average ROE of foreign-owned firms (FOR_{ROE}). The alternative hypothesis states that there is a significant difference between the average ROE of locally owned firms (LOC_{ROE}) and the average ROE of foreign-owned firms (FOR_{ROE}).

H_0: $FOR_{ROE} - LOC_{ROE} = 0$
H_a: $FOR_{ROE} - LOC_{ROE} \neq 0$

c) *Hypothesis 1c*

The null hypothesis states that there is no correlation between the average %EVA of locally owned firms ($LOC_{\%EVA}$) and the average %EVA of foreign-owned firms ($FOR_{\%EVA}$). The alternative hypothesis states that there is a significant difference between the average %EVA of locally owned firms ($LOC_{\%EVA}$) and the average %EVA of foreign-owned firms ($FOR_{\%EVA}$).

H_0: $FOR_{\%EVA} - LOC_{\%EVA} = 0$

H_a: $FOR_{\%EVA} - LOC_{\%EVA} \neq 0$

d) Hypothesis 1d

The null hypothesis states that there is no correlation between the percentage of market growth of locally owned firms ($LOC_{\%MKVAL}$) and the percentage of market growth of foreign owned-firms ($FOR_{\%MKVAL}$). The alternative hypothesis states that there is a significant difference between the percentage of market growth of locally owned firms ($LOC^{\%}_{MKVAL}$) and the percentage of market growth of foreign-owned firms ($FOR_{\%MKVAL}$).

H_0: $FOR_{\%MKVAL} - LOC_{\%MKVAL} = 0$

H_a: $FOR_{\%MKVAL} - LOC_{\%MKVAL} \neq 0$

3.3 Hypothesis 2

Hypothesis 2 states that foreign-owned institutional firms display superior performance to similar locally owned firms.

This hypothesis was tested on three financial measures and one market measure.

a) Hypothesis 2a

The null hypothesis states that there is no correlation between the average ROA of locally owned firms (LOC_{ROA}) and the average ROA of foreign-owned institutional firms ($FORINST_{ROA}$). The alternative hypothesis states that there is a significant difference between the average ROA of locally owned firms (LOC_{ROA}) and the average ROA of foreign-owned institutional firms ($FORINST_{ROA}$).

H_0: $FORINST_{ROA} - LOC_{ROA} = 0$

H_a: $FORINST_{ROA} - LOC_{ROA} \neq 0$

b) Hypothesis 2b

The null hypothesis states that there is no correlation between the average ROE of locally owned firms (LOC_{ROE}) and the average ROE of foreign-owned institutional

firms (FORINST$_{ROE}$). The alternative hypothesis states that there is a significant difference between the average ROE of locally owned firms (LOC$_{ROE}$) and the average ROE of foreign-owned institutional firms (FORINST$_{ROE}$).

H_0:   FORINST$_{ROE}$ - LOC$_{ROE}$ = 0

H_a: FORINST$_{ROE}$ - LOC$_{ROE}$ ≠ 0

c) *Hypothesis 2c*

The null hypothesis states that there is no correlation between the average %EVA of locally owned firms (LOC$_{\%EVA}$) and the average %EVA of foreign-owned institutional firms (FORINST$_{\%EVA}$). The alternative hypothesis states that there is a significant difference between the average %EVA of locally owned firms (LOC$_{\%EVA}$) and the average %EVA of foreign-owned institutional firms (FORINST$_{\%EVA}$).

H_0:   FORINST$_{\%EVA}$ - LOC$_{\%EVA}$ = 0

H_a: FORINST$_{\%EVA}$ - LOC$_{\%EVA}$ ≠ 0

d) *Hypothesis 2d*

The null hypothesis states that there is no correlation between the average market growth of locally owned firms (LOC$_{\%MKVAL}$) and the average market growth of foreign-owned institutional firms (FORINST$_{\%MKVAL}$). The alternative hypothesis states that there is a significant difference between the average market growth of locally owned firms (LOC$_{\%MKVAL}$) and the average market growth of foreign-owned institutional firms (FORINST$_{\%MKVAL}$).

H_0:   FORINST$_{\%MKVAL}$ - LOC$_{\%MKVAL}$ = 0

H_a: FORINST$_{\%MKVAL}$ - LOC$_{\%MKVAL}$ ≠ 0

3.4 Hypothesis 3

Hypothesis 3 states that foreign-owned corporate firms display superior performance to similar locally owned firms.

This hypothesis was tested on three financial measures and one market measure.

a) Hypothesis 3a

The null hypothesis states that there is no correlation between the average ROA of locally owned firms (LOC_{ROA}) and the average ROA of foreign-owned corporate firms ($FORCOR_{ROA}$). The alternative hypothesis states that there is a significant difference between the average ROA of locally owned firms (LOC_{ROA}) and the average ROA of foreign-owned corporate firms ($FORCOR_{ROA}$).

H_0: $FORCOR_{ROA} - LOC_{ROA} = 0$
H_a: $FORCOR_{ROA} - LOC_{ROA} \neq 0$

b) Hypothesis 3b

The null hypothesis states that there is no correlation between the average ROE of locally owned firms (LOC_{ROE}) and the average ROE of foreign-owned corporate firms ($FORCOR_{ROE}$). The alternative hypothesis states that there is a significant difference between the average ROE of locally owned firms (LOC_{ROE}) and the average ROE of foreign-owned corporate firms ($FORCOR_{ROE}$).

H_0: $FORCOR_{ROE} - LOC_{ROE} = 0$
H_a: $FORCOR_{ROE} - LOC_{ROE} \neq 0$

c) Hypothesis 3c

The null hypothesis states that there is no correlation between the average %EVA of locally owned firms ($LOC_{\%EVA}$) and the average %EVA of foreign-owned corporate firms ($FORCOR_{\%EVA}$). The alternative hypothesis states that there is a significant difference between the average %EVA of locally owned firms ($LOC_{\%EVA}$) and the average %EVA of foreign corporate-owned firms ($FORCOR_{\%EVA}$).

H_0: $FORCOR_{\%EVA} - LOC_{\%EVA} = 0$
H_a: $FORCOR_{\%EVA} - LOC_{\%EVA} \neq 0$

d) Hypothesis 3d

The null hypothesis states that there is no correlation between the average market growth of locally owned firms ($LOC_{\%MKVAL}$) and the average market growth of foreign-owned corporate firms ($FORCOR_{\%MKVAL}$). The alternative hypothesis states

that there is a significant difference between the average market growth of locally owned firms ($LOC_{\%MKVAL}$) and the average market growth of foreign-owned corporate firms ($FORCOR_{\%MKVAL}$).

H_0: $FORCOR_{\%MKVAL} - LOC_{\%MKVAL} = 0$

H_a: $FORCOR_{\%MKVAL} - LOC_{\%MKVAL} \neq 0$

3.5 Hypothesis 4

Hypothesis 4 evaluates the investor return in each of the two foreign ownership models by means of a share portfolio method. The growth for each class of ownership was modelled and compared against the locally owned counterpart.

a) Hypothesis 4a

The null hypothesis states that there is no correlation between the average investor return of locally owned firms ($LOC_{\%IR}$) and the average investor return of foreign-owned institutional firms ($FORINST_{\%IR}$).   The alternative hypothesis states that there is a significant difference between the average investor return of locally owned firms ($LOC_{\%IR}$) and the average investor return of foreign-owned institutional firms ($FORINST_{\%IR}$).

H_0: $FORINST_{\%IR} - LOC_{\%IR} = 0$

H_a: $FORINST_{\%IR} - LOC_{\%IR} \neq 0$

b) Hypothesis 4b

The null hypothesis states that there is no correlation between the average investor return of locally owned firms ($LOC_{\%IR}$) and the average investor return of foreign-owned corporate firms ($FORCORP_{\%IR}$). The alternative hypothesis states that there is a significant difference between the average investor return of locally owned firms ($LOC_{\%IR}$) and the average investor return of foreign-owned corporate firms ($FORCORP_{\%IR}$).

H_0: $FORCORP_{\%IR} - LOC_{\%IR} = 0$

H_a: $FORCORP_{\%IR} - LOC_{\%IR} \neq 0$

CHAPTER 4:

RESEARCH METHODOLOGY

4.1 Introduction

The study was a quantitative and descriptive study into the association between foreign ownership and a firm's financial and market performance. A cross-sectional data set of all firms on the JSE All Share Index, as registered on 31 December 2010, was selected to establish whether the theory of foreign ownerships holds true for listed South African firms.

4.2 Research Design

The research focuses on the financial and market performance of firms on the All Share Index (ALSI) as registered on 31 December 2010. Data from this population was used going back to 2004 to build the data set. Data for each firm in the final population was collected from three major data bases. The first data base was the JSE data base, from which the list of firms on the ALSI was compiled, and the sector in which each firm operates was ascertained. The second data base was the McGregor BFA data base, from which all financial and market data were collected. The third data base was the OSIRIS data base, which was used to compile the shareholder data.

The ALSI was chosen because it represents the top ±160 companies on the JSE. Many studies in the literature identify and correct for company size, but a study by Gelübcke (2011) showed that using all companies in a study can bias the results, as the data may compare "apples with oranges" (Gelübcke, 2011, p. 10). For this reason, this study only reviewed the largest public companies in South Africa to ensure that the size of a company did not influence the findings (Ozgulbas, Ali, & Yilmaz, 2006).

Most of the prior studies used regression analysis to show the influence of foreign ownership on the chosen dependent variables. In addition to the level of foreign ownership, many other independent variables have been used, for example, size, age, sector, and many more, to correct for external forces other than ownership. However, it is not possible to correct for all the possible independent variables. To overcome this limitation, the current study used a paired data analysis approach. All foreign-owned firms in the final population were paired with a locally owned firm according to corporate structure, size and sector, and it was assumed that all other external forces

would act on both in the same way and would therefore minimize their influence on the results.

The study used secondary data from the data bases, as discussed above. The benefit of using secondary data is that it is readily available at a low cost, but the disadvantage is that it is not necessary adequate for the research in question (Saunders & Lewis, 2012). For this reason, some data were re-worked to obtain the required ratios and information.

In the first phase of the analysis, ROA, ROE and EVA$^®$ were used as the financial dependent variables to evaluate the effect of the independent variable of foreign ownership. MKVAL was used to evaluate the effect on the market performance with the same independent variable of foreign ownership. Data as reported in the financial reports of the various firms were used to ensure transparency and repeatability.

The second phase investigated the Investor Return (IR) of each foreign ownership model against the performance of locally owned firms to test Hypothesis 4. End-of-month closing share price data and dividends paid were used to calculate the investors' investment growth over the given period.

4.3 Unit of Analysis

The unit of analysis for the research was the annual performance of foreign-owned JSE firms in the population and the annual performance of similar locally owned firms in the population.

4.4 Universe and Population

The population consisted of all foreign-owned companies that were listed on the ALSI on 31 December 2010 and that met the requirements set out below, along with their locally owned paired company. Data pairings were done based on the size, sector, corporate structure and level of foreign ownership. The data pairings constituted the final population. Some firms were excluded from the final population based on the criteria. To meet the criteria,

- a company had to be listed on the ALSI for at least two years prior to 2010 with the same ownership structure;

- a suitable pairing based on the criteria had to be possible; and
- there was adequate data from secondary data base.

4.5 Sample Size and Selection

Sample size is determined by factors such homogeneity, the accuracy required, significance and population size (Saunders & Lewis, 2012).   The population of companies on the JSE is heterogeneous, as there are differences in size, management style, ownership, industries, cultures, locations and products. With these differences in mind and the required accuracy required, the sample had to be a census sample. For this reason the complete population as set out in section 4.4 was used as the sample.

4.6 Data Collection

Organisational financial, market performance data, sector grouping and shareholder details were collected from the McGregor BFA, JSE and OSIRIS financial databases. This included general information, such as shares outstanding, share price, financial ratios, cost of equity, shareholder data and other information required.

The company sector analysis and was done and the ALSI compilation for the period under review was collected directly from the JSE.

The JSE and McGregor BFA databases do not identify shareholders in respect of their point of origin. The OSIRIS database was therefore used to collect the shareholder data, because this database captures all reported shareholders and their country of origin.

4.7 Data Analysis

The data from the databases were inserted into Excel models, from whence the data were interpreted. The most critical part of the analysis was to establish the best possible data pairings for each foreign company.

4.7.1 Data pairing

To establish the pairing database, each foreign-owned company was paired with a locally owned company of similar size and operation. For the data pairing of the firms, four criteria were used:

- market capitalization as a proxy for size;
- sector grouping;
- ownership model; and
- corporate structure.

Detailed description of criteria:

a. *Market capitalization*

Market capitalization was used as a rough proxy for firm size. Market capitalization was calculated from the end-of-year share price and total common shares outstanding (this information was retrieved from the JSE database as reported on 31 December 2010).

b. *Sector grouping*

Sector grouping was based on the sector grouping as provided by the JSE. The JSE is divided into 44 industrial sectors (JSE, 2012), these sectors are then rolled up into nine economic sectors.   The Financial Sector and the Information Technology Sector are combined.   The economic sectors are broadly classified under the three main components that make up the economy:

- o Primary (Mining) Sector – all firms that use natural resources including mining and gas;
- o Secondary (Manufacturing) Sector – all companies that add value through the production of products for the local or global market; and
- o Tertiary (Services) Sector – all service industries, including financial services, health care, telecommunications, transport, banking investment etc.

Table 2 (overleaf) shows the company sector allocation according to each JSE code (Adapted out of JSE, 2012)

Table 2: JSE Sector Grouping

Code	Economic Sector Description	Main Industrial Sector Constituents
Primary (Mining) Sector		
00	Resources	Coal, Oil & Gas, Gold Mining, Platinum and Precious Metals, General Mining
70	Utilities	Power & Water
Secondary (Manufacturing) Sector		
10	Basic Industries	Chemicals, Building & Construction Material, Other Manufacturing, Forestry & Paper, Steel, Steel & Other Material
20	General Industrials	Aerospace & Defence, Diversified Industrials, Electronic & Electric Equipment, Engineering & Machinery
30	Cyclical Consumer Goods	Automotive & Parts, Household Goods & Textiles
40	Non Cyclical Consumer Goods	Beverages, Food Producers & Processors, Health, Packaging, Personal Care & Household Products, Pharmaceuticals & Biotechnology
Tertiary (Service) Sector		
50	Cyclical Services	Hiring Supply, General Retailers, Trade, Leisure Entertainment & Hotels, Media & Photography, Support Services, Transport
60/80	Non Cyclical Services	Food & Drug Retailers, Telecommunication Services, Banks, Insurance, Life Assurance, Investment Companies, Real Estate, Specialty & Other Finance, Investment Entities
90	Information Technology	Information Technology Hardware, Software & Computer Services

Source: Adapted out of JSE (2012)

Each firm was paired according to the three components of the sector grouping. In previous studies, the financial sector was ignored, due to differences in financial reporting (Mihai, 2012; Zeitun & Tian, 2007). In this study, given the paired data methodology, these firms could be included, because they were compared with similar companies, negating the influence of accounting differences in this sector.

c. Ownership model

The ownership structure of each firm was grouped into four possible classes. The top three foreign shareholders were used to derive a final percentage of foreign or local ownership. If the firm did not meet the criteria set out in Figure 5, it was disregarded. The groupings were defined according to the following guidelines:

- o Local institutional (LI) ownership:

  Shares are traded on the open market and foreign shareholding of the top three shareholders did not exceed 25% shareholding in the firm. In addition, the top three local shareholders' holdings exceeded 25%.

- o Local corporate (LC) ownership:

  Shares are traded on the open market and foreign shareholding of the top three foreign shareholders did not exceed 25% shareholding in the firm. In addition, there had to be a single local shareholder exceeding 50% shareholding.

- o Foreign institutional (FI) ownership:

  Top three foreign shareholders exceeded 25% shareholding, with no single shareholder exceeding 50%. This was seen as "major institutional" foreign ownership, where influence is seen as unlikely but possible.

- o Foreign corporate (FC) ownership:

  These were the foreign owners who took active part in the daily operation of the business. Single foreign ownership was equal to and greater than 50%. This group of foreign ownership was seen to have full control or ability to influence policy and management.

Shareholder data is a complex system of direct and indirect holdings. Shares are held in individual or in company names, through investment firms and through subsidiaries. The researcher made every effort to ensure that shareholders were correctly classified. Figure 5 (overleaf) shows the decision tree used in grouping companies.
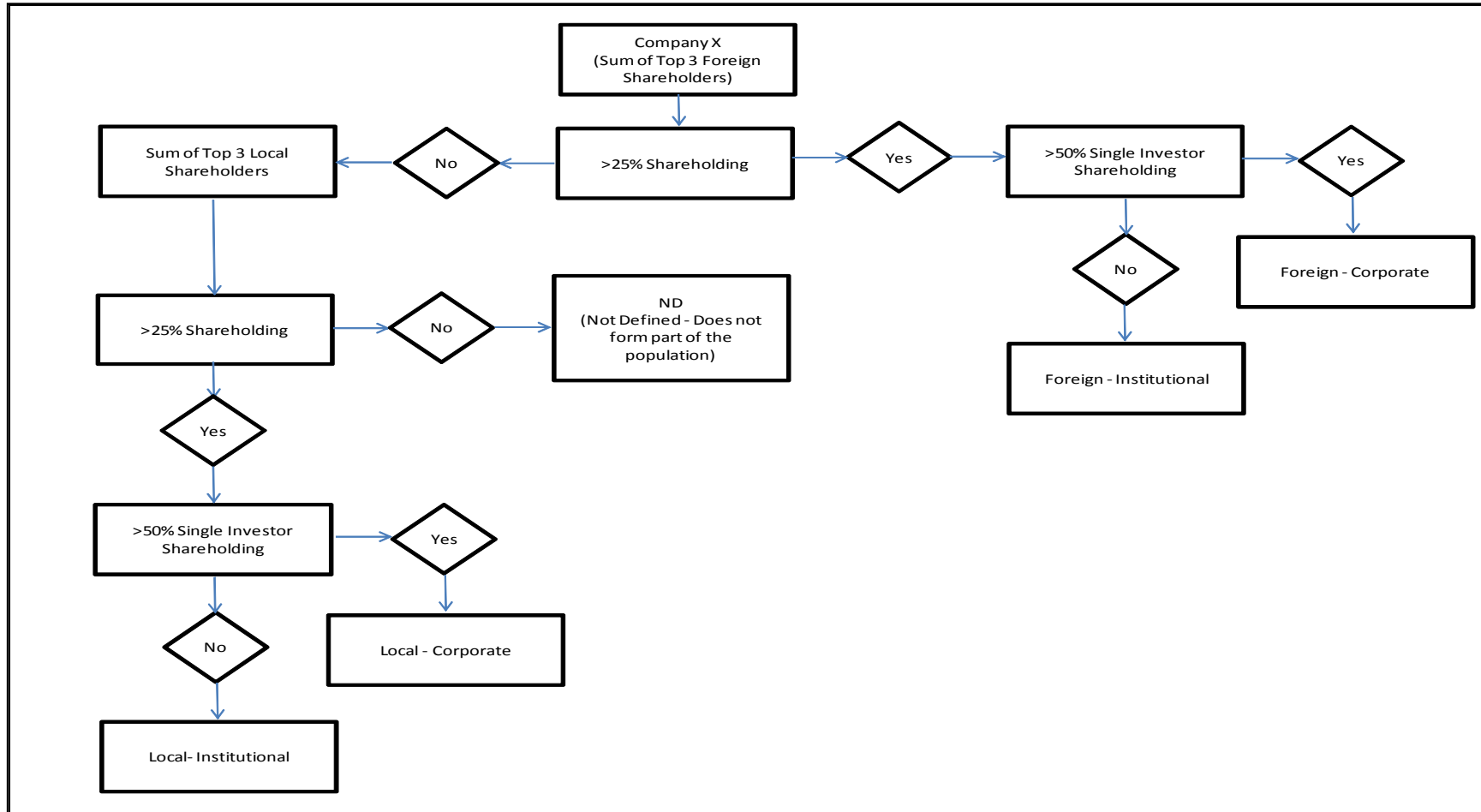
Figure 5: Decision Tree for Company Evaluation and Ownership Allocation

d. Corporate Structure

To eliminate the agency problem effect, pairings were also done to ensure similar corporate structures. A firm where the foreign ownership model was applied was duplicated for locally owned firms; for example, if a firm had a foreign controlling owner, it was paired with a firm with a local controlling owner.

Using the four ownership models, the firms were paired as either local/foreign institutional or local/foreign corporate, using the market capitalization, sector and corporate structure as guidelines to ensure that the ownership structure was the only difference. Although all efforts were made to ensure all aspects were similar, there are some differences due to the nature of the companies that were paired.

4.7.2 Financial data analysis

Financial data in the form of ROA and ROE were used, as reported in the McGregor BFA database. The %ROA was calculated as follows (McGregorBFA, 2012):

$$\%ROA = \frac{(EBIT - TPEN)}{TA} \times 100$$

Where:

  EBIT   = *Earnings Before Interest and Tax*
  TPEN = *Total Profit of Extraordinary Nature*
  TA   = *Total Assets*

The %ROE was calculated as follows (McGregorBFA, 2012):

$$\%ROE = \frac{PAT}{TOI} \times 100$$

Where:

  PAT   = *Profit After Tax*
  TOI   = *Total Owners Interest*

EVA® is an actual rand value, as reported in the McGregor BFA database, and this was converted to a percentage value based on the market capitalization value of each firm for comparison purposes as follows:

$$\%EVA = \frac{(MCap \times COE + EVA)}{MCap} \times 100 - COE$$

Where:

MCap = *Gross market capitalization at the end of the year*

COE = *Cost of Equity*

EVA = *Economic value Added*

This formula can be simplified to:

$$\%EVA = \frac{EVA}{MCap} \times 100$$

Cost of equity (ke) is used as reported in the McGregor BFA database, which used the following formula:

$$ke = Rf + \beta(Rm - Rf)$$

Where:

R_f = *Risk-free return*

R_m = *Expected market return,*

a nominal value of 6% was chosen for all companies

β = *Risk coefficient of firm*

To calculate the COE, and WACC for EVA®, the long-term risk-free rate of the R157 was used – it matures in 2015 and is the most frequently used risk-free return rate in financial studies (Lilford, 2006). The risk premium was set to 6% for all years. As discussed in the literature review (see Section 2.5.2), there are many way to correct for EVA® calculations – the detailed corrections used in McGregor BFA are set out in Appendix 1 (McGregorBFA, 2012).

The market value growth was calculated as the growth in market value which is given by the following formula:

$$\%\text{MKVAL} = \frac{MKVAL(t) - MKVAL(t-1)}{MKVAL(t-1)} \times 100$$

Where:

$$\text{MKVAL} = CSP \times Shares\ Outstanding$$

and:

CSP = *Closing Share Price for the year*

4.7.3 Investor return analysis

In the second phase of the review, the investor return was evaluated using share price growth and dividends paid. The percentage investor return (%IR) was calculated for each of the foreign-owned and locally owned pairs from 2008 to 2010 on a monthly basis (t). The period was chosen to ensure that all pairs were used. The foreign-owned and locally owned firms were then grouped into separate share portfolios, where a nominal amount of R10 000 was invested in each portfolio and the return performance of the groups was monitored.

The %IR was calculated as follows:

$$\%IR = \frac{(\text{TPV}(t) - \text{TPV}(t-1))}{\text{TPV}(t-1)} \times 100$$

Where:

TPV = *Total Portfolio Value*
          = *Shares Allocated x Share Price*

All dividends paid were re-invested to ensure that the total investor return was evaluated. To incorporate dividends, the number of shares that was initially allocated was increased with the value received from dividend payouts:

$$SA(t) = \text{SA}(t-1) + \frac{\frac{\text{DY}(t)}{100} \times \text{SA}(t-1)}{\text{SP}(t)}$$

Where:

    SA   = *Shares Allocated*

    DY   = *Dividend Yield in cents (c)*

    SP   = *Share Price in rand (R)*

4.7.4 Statistical analysis method

The original data set was checked for outliers using the Box-Whisker technique. Data outside x1.5 of the inter quartile range were removed as outliers. There is some debate in the literature about whether to remove outliers or not. The current study followed the advice of Osborne and Overbay (2004), who found that removing outliers improves accuracy and reduces interference errors. Furthermore, they point out that outliers tend to distort statistical estimates substantially, in both parametric and non-parametric statistical tests.

Parametric paired T-test and Non-Parametric paired Wilcoxon Signed-Rank tests were used to test the statistical relevance of the hypotheses as stated on the cleaned data sets. The significance level was set to 5%, which represents a 95% confidence level. For a parametric T-test to be used, it is critical for the data to be normally distributed, as assumptions of normality could lead to serious data anomalies and errors if the assumptions are incorrect (Albright, Winston, & Zappe, 2009; Z. Wang, Kueng, & Ng, 2006). Therefore, even where the data set exceeded 30 data points and normality could be assumed, the data was tested for normality using the Chi-Square method (Albright et al., 2009). If normality was demonstrated, then a parametric paired T-test was used, but if normality was rejected, then a non-parametric Wilcoxon Signed-Rank Test was used to evaluate the statistical significance of the data (Albright et al., 2009; Z. Wang et al., 2006).

4.8 Limitations of the Study

The following limitations of the study have been identified

- The size of the South African economy limited the number of firms available for analysis. Ideally, more firms would be required to improve the relevance of the research in each sector. Aggregate bias could influence the results.
- The definition of a locally owned firm for the purposes of the study was any firm registered on the JSE with South African owners. However, it ignored where the

revenue was created. Some South African firms earn their revenue predominantly outside the borders of the country, therefore limiting their contribution to the effect of foreign ownership over local ownership, as other managers in other countries are providing the revenue.

- The effects of the economic environment in respect of infrastructure, local labour, communication networks and macroeconomic policies were assumed to be the same for all companies, thus ignoring any geographical and regional influences. Although the pairing of similar companies in the same sectors would negate many of the macro and micro influences, it could not correct for geographical differences.

- A phenomenon mentioned by Douma et al. (2006) is reverse causality. This occurs where ownership is influenced by a firm's performance and not the other way around (Gorg & Greenaway, 2004; Gurbuz & Aybars, 2010; Singh et al., 2003). This cannot be verified or investigated in a cross-sectional study.

- In prior studies, the effect of the country of origin of the foreign owner and the sector which the firm operates in was shown to have influence the derived benefits from the investment. Due to the small sample and data constraints, these variables were not included in the study, but may have affected the results.

- Shareholder data is a fairly complex domain. There are many ways available to investors to invest in companies. These vary from direct investment to indirect investment through funds, investments and other entities. They also vary from single layer investments (where Company A owns shares in Company B) to multi-layer investments. An example of a multi-layer investment is where Company A holds a 100% share of Company B, Company B holds a 50% share in Company C and Company C holds a 50% share in Company D. Company A is then effectively a 25% shareholder in Company D. Although all efforts were made by the researcher to account for all possible permutations of shareholding, many decisions were based on available information and his interpretation of the information.

CHAPTER 5:
RESULTS

5.1 Introduction

Chapter 5 summarizes the salient results from the analysis as described in Chapter 4, bearing in mind the overall aim of the study, and the four hypotheses set out in detail in Chapter 3.

5.2 Descriptive Results from Research Sample

Based on the methodology described in Section 4.71, each company with foreign ownership greater than 25% (the sum of the top three foreign shareholders, see Figure 5) was identified from the JSE ALSI. Each of these foreign-owned companies was paired with a locally owned company according to the criteria set out in Chapter 4. Table 3 shows the total possible number of paired data sets on 31 December 2010.

Table 3: Data Pairs for Analysis

Pair Number	Foreign Owned Firm (Corp/Inst)	Local Pair
1	Anglo Platinum	Impala Platinum Hlds
2	Palabora Mining	African Rainbow Minerals Ltd
3	African Oxygen	AECI
4	ArcelorMittal South Africa Ltd	No Pair
5	Evraz Highveld Steel & Vanadium	No Pair
6	Illovo Sugar	Tiger Brands
7	Kumba Iron Ore	No Pair
8	ABSA Group Limited	Firstrand Limited
9	Growthpoint Prop Ltd	Emira Property Fund
10	Nedbank Group	RMB Holdings
11	Anglogold Ashanti	Sasol
12	Bell Equipment	Barloworld
13	Gold Fields	Harmony
14	Hudaco Industries	Invicta Holdings
15	Hulamin	Petmin Ltd.
16	KAP International Ltd	Eqstra Holdings
17	Massmart Holdings	Mr Price Group
18	Metair Investments	No Pair
19	Metorex Ltd	Merafe Resources
20	Murray & Roberts	Group Five/South Africa
21	Standard Bank Group	No Pair

Pair Number	Foreign Owned Firm (Corp/Inst)	Local Pair
22	Tongaat Hulett	AVI
23	Wesizwe Platinum	Sentula Mining

From the ownership study, 23 foreign companies were identified. Of these, only 18 pairs were connected. The five companies ArcelorMittal, Evraz Highveld Steel & Vanadium, Kumba Iron Ore, Metair Investments and Standard Bank were not paired, because no suitable pairing existed or suitable pairings were already used in other pairings.

Table 4 shows the final pairing results with criterion-matching.

Table 4: Detailed Pairing Data

Name	Ownership Category	Primary Grouping	Economic Grouping	Subsector	Mcap
Anglogold Ashanti	>25% FI	Primary	Resources	Gold Mining	124,606
Sasol	>25% LI	Primary	Resources	Integrated Oil & Gas	$220,507
Gold Fields	>25% FI	Primary	Resources	Gold Mining	86,803
Harmony	>25% LI	Primary	Resources	Gold Mining	35,649
Hulamin	>25% FI	Primary	Resources	General Mining	2,753
Petmin Ltd.	>25% LI	Primary	Resources	General Mining	1,673
Metorex Ltd	>25% FI	Primary	Resources	General Mining	5,252
Merafe Resources	>25% LI	Primary	Resources	General Mining	4,110
Wesizwe Platinum	>25% FI	Primary	Resources	Platinum & Precious Metals	1,915
Sentula Mining	>25% LI	Primary	Resources	General Mining	1,701
Anglo Platinum	>50% FC	Primary	Resources	Platinum & Precious Metals	182,370
Impala Platinum Hlds	>25% LI	Primary	Resources	Platinum & Precious Metals	146,974
Palabora Mining	>50% FC	Primary	Resources	General Mining	5,510
African Rainbow Minerals Ltd	>50% LC	Primary	Resources	General Mining	44,334
Hudaco Industries	>25% FI	Secondary	General Industries	Industrial Machinery	2,824
Invicta Holdings	>25% LI	Secondary	General Industries	Industrial Machinery	3,293
KAP International Ltd	>25% FI	Secondary	General Industries	Diversified Industrials	1,122
Eqstra Holdings	>25% LI	Secondary	General Industries	Diversified Industrials	2,758
Murray & Roberts	>25% FI	Secondary	Basic Industries	Heavy Construction	13,332
Group Five/South Africa	>25% LI	Secondary	Basic Industries	Heavy Construction	4,373
Tongaat Hulett	>25% FI	Secondary	Non-Cyclical Consumer	Food Products	11,372

Name	Ownership Category	Primary Grouping	Economic Grouping	Subsector	Mcap
			Goods		
AVI	>25% LI	Secondary	Non-Cyclical Consumer Goods	Food Products	10,522
African Oxygen	>50% FC	Secondary	Basic Industries	Chemicals - Specialty	7,080
AECI	>25% LI	Secondary	Basic Industries	Chemicals - Specialty	9,805
Illovo Sugar	>50% FC	Secondary	Non-Cyclical Consumer Goods	Food Products	12,593
Tiger Brands	>25% LI	Secondary	Non-Cyclical Consumer Goods	Food Products	36,767
Bell Equipment	>25% FI	Secondary	General Industries	Commercial Vehicles & Trucks	954
Barloworld	>25% LI	Secondary	General Industries	Diversified Industrials	15,440
ABSA Group Limited	>50% FC	Tertiary	Non-Cyclical Services	Banks	100,549
Firstrand Limited	>25% LI	Tertiary	Non-Cyclical Services	Banks	109,521
Growthpoint Prop Ltd	>50% FC	Tertiary	Non-Cyclical Services	Real Estate Holding & Development	28,806
Emira Property Fund	>50% LC	Tertiary	Non-Cyclical Services	Real Estate Holding & Development	7,026
Nedbank Group	>50% FC	Tertiary	Non-Cyclical Services	Banks	66,757
RMB Holdings	>25% LI	Tertiary	Non-Cyclical Services	Banks	46,551
Massmart Holdings	>25% FI	Tertiary	Cyclical Services	Broadline Retailers	29,867
Mr Price Group	>25% LI	Tertiary	Cyclical Services	Apparel Retailers	16,356

Although all efforts were made to ensure the best possible matches, there were some pairings where one of the criteria was not met perfectly, but the data pairing was considered sound enough to continue.

Figure 6 shows the overall distribution of the pairings in the two main ownership groupings. It can be seen the institutional companies formed over 60% of the final sample.
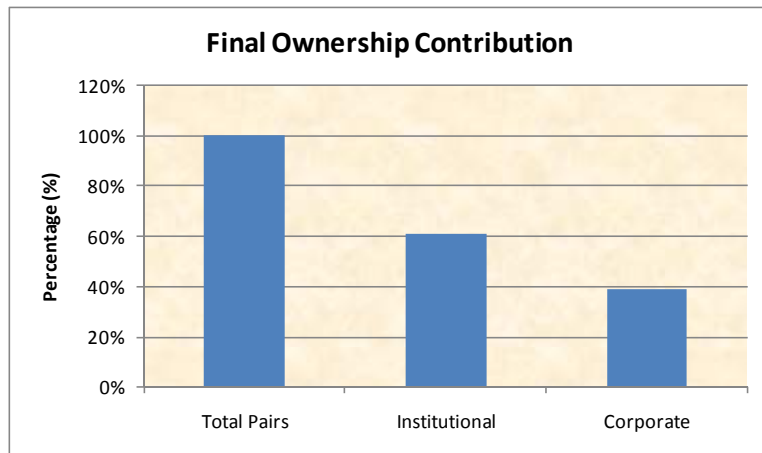
Figure 6: Ownership Contribution to Overall Sample

Figure 7 shows that there was an equal distribution of 39% each from the primary and secondary sectors, and only 22% from the tertiary sector.
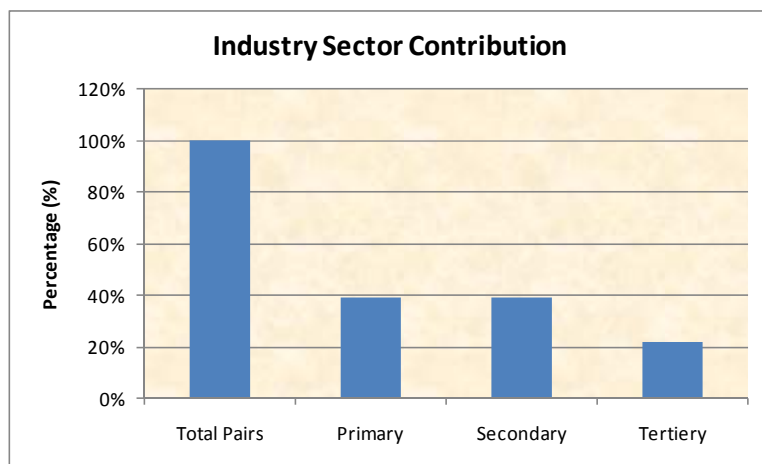
Figure 7: Industry Contribution to the Final Sample

The second level of sector grouping was the economic grouping. As Figure 8 shows, resources were the predominant contributor, constituting close to 40% of the final sample. The distribution of the sample thereafter was fairly evenly divided between the other economic sectors, except for cyclical services, which only contributed six per cent to the final sample.
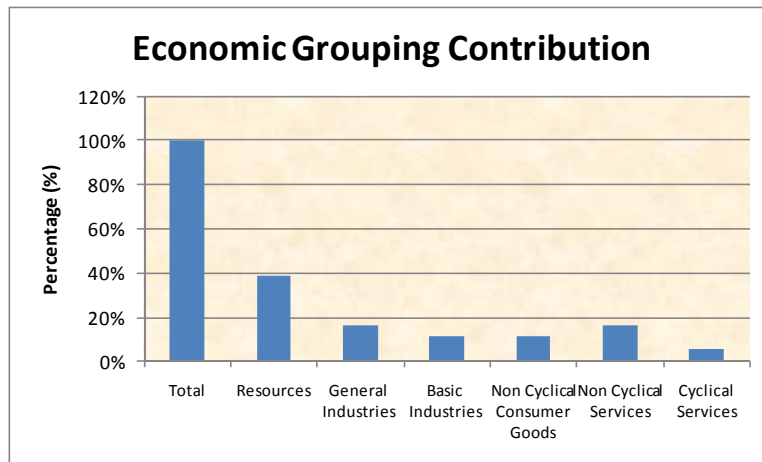
Figure 8: Economic Grouping Contribution of the Final Sample

5.3 Analysis Methodology and Hypothesis Test

The original data set for each hypothesis was developed from the criteria set out in Section 4.7.1. StatTools statistical software was then used as a tool to review the original data and to perform an analysis of the normality and significance of each set of results. The following process was followed:

- The original data set was checked for outliers, using a Box-Whisker plot. Mild outliers (1.5x from the inter quartile range) and extreme outliers (>3 x from the inter quartile range) were removed.
- The Chi-Square method was used to check the normality of the data.
- Based on the results from the Chi-Square test, the following tests were then used:
    - if Normality is shown: Paired Parametric T-test; and
    - if Normality is rejected: Paired Non-Parametric Wilcoxon Signed-Rank Sum Test.
- Both tests were used to test the difference of the stated parameter mean.
- Significance was set at 5%, which represents a 95% confidence level, to reduce the probability of a Type II error which relates to the failure to reject the null hypothesis, when in fact it should have been rejected.
- All data generated from the method shown above is either shown in this chapter or in Appendices 2 to 4.

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5.4 Descriptive Results – Aggregate Foreign Ownership

The aggregate foreign ownership was reviewed to identify possible differences as compared to their locally owned counterparts on an aggregate basis. Table 5 shows the summary of the final number of data pairs and data removed for each performance measure.

Table 5: Summary of Data Removed

Measure	Original Data Set	Final Data Set	% Rejected
ROA	92	87	5.4%
ROE	92	84	8.7%
%EVA	80	69	13.8%
%MKVAL	90	81	10.0%

Due to large variations in EVA®, the final rejection rate was higher than expected. All the original data sets, Box-Whisker Plot results, normality test results and outliers removed are shown in Appendix 2 for each criterion.

The large reduction in the %EVA of the original data set is due to the fact that EVA® is not reported for gold mining companies, because gold is seen as a depleting resource, and these mines were therefore not reviewed (McGregor BFA, 2012).

5.4.1 Foreign ownership and ROA: Hypothesis 1a

Table 6 gives an overview of the explanatory results for the ROA final data set.

Table 6: Descriptive Statistics for the ROA for the Aggregate Foreign Ownership Sample

	Summary Statistics: ROA		
Variable	Foreign Ownership	Local Ownership	Difference
Summary	ROA Total		(For-Local)
Mean	10.6	12.6	-2.0
Variance	76.7	97.8	80.0
Std. Dev.	8.8	9.9	8.9
Minimum	-27.8	-13.5	-27.1
Maximum	35.9	40.6	15.6
Range	63.7	54.1	42.7
Count	87	87	87

The overall range of data was similar, with similar standard deviations for both sets of data. The average data indicate that locally owned firms, on average, performed 2.0% better than their foreign-owned counterparts.

Hypothesis Test

The null hypothesis states that there is no correlation between the average ROA of locally owned firms (LOC_{ROA}) and the average ROA of foreign-owned firms (FOR_{ROA}). The alternative hypothesis states that there is a significant difference between the average ROA of locally owned firms (LOC_{ROA}) and the average ROA of foreign-owned firms (FOR_{ROA}).

H_0: $FOR_{ROA} - LOC_{ROA} = 0$

H_a: $FOR_{ROA} - LOC_{ROA} \neq 0$

The normality test showed that the data were not normally distributed; therefore, a Wilcoxon Signed-Rank Sum Test was used to test the hypothesis, as shown in Table 7.

Table 7: Statistical Analysis Results for ROA of Foreign Ownership

Signed-Rank Test (Paired-Sample)	Diff (For-Loc)
Sample Statistics	
Sample Size	87
Sample Mean	-2.02
Sample Std. Dev.	8.94
Sample Median	1.08
p-Value Computation	
p-Value	0.23
Significance Levels	
Null Hypoth. at 10% Significance	Don't Reject
Null Hypoth. at 5% Significance	Don't Reject
Null Hypoth. at 1% Significance	Don't Reject

The null hypothesis cannot be rejected; therefore, there is statistically no difference between the two average ROA values.

5.4.2 Foreign ownership and ROE: Hypothesis 1b

Table 8 summarises the explanatory results for the ROE final data set.

Table 8: Descriptive Statistics for the ROE for the Aggregate Foreign Ownership Sample

One Variable Summary	Foreign Ownership	Local Ownership	Difference
	ROE Total		(For-Local)
Mean	16.9	17.0	-0.1
Variance	211.3	153.1	140.9
Std. Dev.	14.5	12.4	11.9
Minimum	-18.3	-22.3	-30.8
Maximum	50.2	41.5	34.1
Range	68.5	63.8	65.0
Count	84	84	84

There is a difference between the variance between the two data sets, but the overall deviation is similar. The average ROE data shows that there is only a very small difference of 0.1% between the two data sets.

Hypothesis Test

The null hypothesis states that there is no correlation between the average ROE of locally owned firms (LOC_{ROE}) and the average ROE of foreign-owned firms (FOR_{ROE}). The alternative hypothesis states that there is a significant difference between the average ROE of locally owned firms (LOC_{ROE}) and the average ROE of foreign-owned firms (FOR_{ROE}).

H_0: FOR_{ROE} - LOC_{ROE} = 0

H_a: FOR_{ROE} - $LOC_{ROE} \neq 0$

The normality test confirmed that the data were normally distributed; therefore, a parametric T-test was used to test the hypothesis, as shown in Table 9.

Table 9: Statistical Analysis Results for ROE of Foreign Ownership

Hypothesis Test (Paired-Sample)	Diff (For-Loc)
Sample Size	84
Sample Mean	-0.14
Sample Std Dev	11.87
p-Value	0.91
Null Hypoth. at 10% Significance	Don't Reject
Null Hypoth. at 5% Significance	Don't Reject
Null Hypoth. at 1% Significance	Don't Reject

The null hypothesis cannot be rejected; therefore, there is statistically no difference between the two average ROE values.

5.4.3 Foreign ownership and %EVA: Hypothesis 1c

Table 10 summarises the explanatory results for the %EVA final data set. All EVA[®] data are represented as a percentage of market capitalization. Gold mining EVA[®] data are not reported in the McGregor BFA database, as gold is seen as a depleting resource. Therefore all gold mining comparisons were removed before analysis.

Table 10: Descriptive Statistics for the %EVA for the Aggregate Foreign Ownership Sample

Summary Statistics: %EVA			
One Variable	Foreign Ownership	Local Ownership	Difference
Summary	%EVA Total		(For-Local)
Mean	1.6	-0.4	1.9
Variance	55.8	38.5	49.8
Std. Dev.	7.5	6.2	7.1
Minimum	-28.2	-16.9	-14.9
Maximum	16.8	13.7	17.8
Range	45.0	30.6	32.7
Count	69	69	69.0

As the summary of results shows, there is a difference of 1.9%, with foreign-owned companies reporting a higher and positive %EVA, whereas the locally owned companies' %EVA was, on average, negative. Any negative value means that the company destroyed value (in other words, produced less profit than was expected by its shareholders) and any positive number shows that a company has created more value than was expected by its shareholders. The expectations of its shareholders are captured in the form of cost of equity.

Hypothesis Test

The null hypothesis states that there is no correlation between the average %EVA of locally owned firms ($LOC_{\%EVA}$) and the average %EVA of foreign-owned firms ($FOR_{\%EVA}$). The alternative hypothesis states that there is a significant difference between the average %EVA of locally owned firms ($LOC_{\%EVA}$) and the average %EVA of foreign-owned firms ($FOR_{\%EVA}$).

H_0: $FOR_{\%EVA} - LOC_{\%EVA} = 0$

H_a: $FOR_{\%EVA} - LOC_{\%EVA} \neq 0$

The normality test showed that the data were normally distributed, therefore, the parametric T-test was used to test the difference between the pairs. The results of the parametric test are shown in Table 11.

Table 11: Statistical Analysis Results for %EVA of Foreign Ownership

Hypothesis Test (Paired-Sample)	Diff (For-Loc)
Sample Size	69
Sample Mean	1.92
Sample Std Dev	7.06
p-Value	0.03
Null Hypoth. at 10% Significance	Reject
Null Hypoth. at 5% Significance	Reject
Null Hypoth. at 1% Significance	Don't Reject

The null hypothesis was rejected at a 95% confidence level in favour of the alternative hypothesis. Therefore, the difference between the two data sets was statistically significant.

5.4.4 Foreign ownership and %MKVAL: Hypothesis 1d

Table 12 gives an overview of the explanatory results for the %MKVAL final data set.

Table 12: Descriptive Statistics for the %MKVAL for the Aggregate Foreign Ownership Sample

Summary Statistics: %MKVAL			
One Variable	Foreign Ownership	Local Ownership	Difference
Summary	%MKVAL Total		(For-Local)
Mean	13.8	19.8	-6.0
Variance	1573.6	1472.8	712.9
Std. Dev.	39.7	38.4	26.7
Minimum	-86.1	-63.7	-62.2
Maximum	122.9	143.3	56.4
Range	209.1	207.0	118.6
Count	81	81	81

Locally-owned companies showed a 6% greater market growth than their foreign-owned counterparts. The summary statistics show that the data sets are similar in range and variance.

Hypothesis Test

The null hypothesis states that there is no correlation between the percentage of market growth of locally owned firms ($LOC_{\%MKVAL}$) and the percentage of market growth of foreign-owned firms ($FOR_{\%MKVAL}$). The alternative hypothesis states that there is a significant difference between the percentage of market growth of locally owned firms ($LOC^{\%}_{MKVAL}$) and the percentage of market growth of foreign-owned firms ($FOR_{\%MKVAL}$).

$$H_0: \quad FOR_{\%MKVAL} - LOC_{\%MKVAL} = 0$$
$$H_a: \quad FOR_{\%MKVAL} - LOC_{\%MKVAL} \neq 0$$

The normality test showed that the data were normally distributed; therefore, a parametric T-test was used to test the difference between the pairs. The results of the parametric T-test are shown in Table 13.

Table 13: Statistical Analysis Results for MKVAL of Foreign Ownership

Hypothesis Test (Paired-Sample)	Diff (For-Loc)
Sample Size	81
Sample Mean	-6.02
Sample Std Dev	26.70
p-Value	0.046
Null Hypoth. at 10% Significance	Reject
Null Hypoth. at 5% Significance	Reject
Null Hypoth. at 1% Significance	Don't Reject

The null hypothesis was rejected at a 95% confidence level; therefore, the difference between the two data sets was statistically significant. Locally owned companies showed increased growth, compared to foreign-owned companies.

5.4.5 Summary

The salient results for the evaluation are summarised in Table 14.

Table 14: Summary of the Influence of Foreign Ownership on an Aggregate Sample of Firms

Variable	Difference (For - Loc)	P-Value	Null Hypothesis
ROA	-2.0%	0.23	Don't Reject
ROE	-0.1%	0.91	Don't Reject
%EVA	+1.9%	0.027	Reject
%MKVAL	-6.0%	0.046	Reject

The financial performance of locally-owned firms versus that of foreign firms for the aggregate sample as represented by the indicators ROA and ROE shows that there was statistically no difference between foreign-owned and locally owned firms. The %EVA did show an increase of 1.9% more value added by the foreign-owned companies compared to the locally owned companies, and this increase is statistically significant. Finally, the locally owned firms reported a 6% larger company growth than foreign-owned firms, which is statistically significant.

5.5 Foreign Institutional Ownership Influence: Hypothesis 2

The original data set was split into the two foreign ownership models of institutional and corporate ownership. As discussed in Section 4.7.1, foreign institutional ownership implies that the top three foreign shareholders hold more than 25% of the total shareholding, with no single shareholder exceeding 50%.

All the institutional data were collated in a similar manner to that explained for Hypothesis 1, and the same techniques for identifying and removing outliers were used. Table 15 shows the summary of the final data pairs and the data removed for each performance measurement.

Table 15: Summary of Data Removed

Measure	Original Data Set	Final Data Set	% Rejected
ROA	52	49	5.8%
ROE	52	47	9.6%
%EVA	40	35	12.5%
%MKVAL	51	42	17.6%

The rejection rate for the %EVA and the %MKVAL was higher than for the two financial ratios of ROE and ROA. As discussed previously, the lower sample number for EVA is

explained by the removal of all gold mining companies from the data set, due to missing results. The high value for %MKVAL is data related and a cause of concern. All original data sets, Box-Whisker Plot results and outliers removed are shown in Appendix 3 for each measurement.

5.5.1 Foreign institutional ownership and ROA: Hypothesis 2a

Table 16 summarises the explanatory results for the ROA of the final data set.

Table 16: Descriptive Statistics for the ROA for the Institutional Foreign Ownership Sample

Summary Statistics Institutional Ownership: ROA			
Variable Summary	Foreign Ownership	Local Ownership	Difference
	ROA Total		(For-Local)
Mean	8.6	11.2	-2.5
Variance	78.1	80.7	86.4
Std. Dev.	8.8	9.0	9.3
Minimum	-27.8	-13.5	-25.7
Maximum	22.5	29.8	15.6
Range	50.3	43.2	41.3
Count	49	49	49

The average data indicates that the foreign institutional firms performed 2.5% worse than their locally owned counterparts. All other descriptive statistics for the two samples are similar.

Hypothesis Test

The null hypothesis states that there is no correlation between the average ROA of locally owned firms (LOC_{ROA}) and the average ROA of foreign-owned institutional firms ($FORINST_{ROA}$). The alternative hypothesis states that there is a significant difference between the average ROA of locally owned firms (LOC_{ROA}) and the average ROA of foreign-owned institutional firms ($FORINST_{ROA}$).

H_0: $FORINST_{ROA} - LOC_{ROA} = 0$

H_a: $FORINST_{ROA} - LOC_{ROA} \neq 0$

The null hypothesis for the normality test cannot be rejected; therefore, the data set was normally distributed. A parametric T-test was used to test the hypothesis and the results are shown in Table 17.

Table 17: Statistical Analysis Results for ROA of Foreign Institutional Ownership

Hypothesis Test (Paired-Sample)	Diff (For-Loc)
Sample Size	49
Sample Mean	-2.55
Sample Std Dev	9.30
p-Value	0.0610
Null Hypoth. at 10% Significance	Reject
Null Hypoth. at 5% Significance	Don't Reject
Null Hypoth. at 1% Significance	Don't Reject

The null hypothesis could not be rejected at a 95% confidence level; therefore, the difference of 2.5% is not statistically significant.

5.5.2 Foreign institutional ownership and ROE: Hypothesis 2b

Table 18 gives an overview of the explanatory results for the ROE final data set.

Table 18: Descriptive Statistics for the ROE for the Institutional Foreign Ownership Sample

Summary Statistics Institutional Ownership: ROE			
One Variable Summary	Foreign Ownership	Local Ownership	Difference
	ROE Total		(For-Local)
Mean	13.80	14.38	-0.58
Variance	240.37	189.78	159.90
Std. Dev.	15.50	13.78	12.65
Minimum	-18.30	-22.34	-30.83
Maximum	48.86	41.45	18.92
Range	67.16	63.79	49.74
Count	47	47	47

As shown for the aggregate sample, there is only a small difference between the performance of locally owned and foreign-owned institutional firms. The overall difference was 0.58%, with locally owned firms performing slightly better.

Hypothesis Test

The null hypothesis states that there is no correlation between the average ROE of locally owned firms (LOC_{ROE}) and the average ROE of foreign-owned institutional firms ($FORINST_{ROE}$). The alternative hypothesis states that there is a significant difference between the average ROE of locally owned firms (LOC_{ROE}) and the average ROE of foreign-owned institutional firms ($FORINST_{ROE}$).

H_0: $FORINST_{ROE} - LOC_{ROE} = 0$

H_a: $FORINST_{ROE} - LOC_{ROE} \neq 0$

The low p-value in the normality test indicates that the null hypothesis could be rejected at a 95% confidence level; therefore, the data were not normally distributed. The summary results from the non-parametric Wilcoxon Signed-Rank Sum Test are shown in Table 19.

Table 19: Statistical Analysis Results for ROE of Foreign Institutional Ownership

Signed-Rank Test (Paired-Sample)	Diff (For-Loc)
Sample Statistics	
Sample Size	47
Sample Mean	-0.582911642
Sample Std. Dev.	12.64526607
Sample Median	3.546450344
p-Value Computation	
p-Value	0.7710
Significance Levels	
Null Hypoth. at 10% Significance	Don't Reject
Null Hypoth. at 5% Significance	Don't Reject
Null Hypoth. at 1% Significance	Don't Reject

The null hypothesis could not be rejected; therefore, there was statistically no difference between the two average ROE values.

5.5.3 Foreign institutional ownership and %EVA: Hypothesis 2c

Table 20 gives a summary overview of the explanatory results for the %EVA final data set.

Table 20: Descriptive Statistics for the %EVA for the Institutional Foreign Ownership Sample

Summary Statistics Institutional Ownership: %EVA			
One Variable Summary	Foreign Ownership	Local Ownership	Difference
	%EVA Total		(For-Local)
Mean	-1.97	-0.96	-1.02
Variance	83.58	46.46	66.41
Std. Dev.	9.14	6.82	8.15
Minimum	-28.68	-16.94	-20.43
Maximum	9.83	9.99	17.76
Range	38.50	26.93	38.19
Count	35	35	35

It can be seen that foreign-owned institutional firms destroy, on average, 1.97% of value, compared to the 0.96% destroyed by locally owned firms. This is in contrast to the original finding that foreign-owned firms in the aggregate sample added value. The difference between the two average performances is 1.02%, with locally owned firms performing better.

Hypothesis Test

The null hypothesis states that there is no correlation between the average %EVA of locally owned firms (LOC$_{\%EVA}$) and the average %EVA of foreign-owned institutional firms (FORINST$_{\%EVA}$). The alternative hypothesis states that there is a significant difference between the average %EVA of locally owned firms (LOC$_{\%EVA}$) and the average %EVA of foreign-owned institutional firms (FORINST$_{\%EVA}$).

H_0:   FORINST$_{\%EVA}$ - LOC$_{\%EVA}$ = 0

H_a: FORINST$_{\%EVA}$ - LOC$_{\%EVA}$ ≠ 0

The null hypothesis of the normality test could be rejected; therefore, the data were not normally distributed. The non-parametric Wilcoxon Signed-Rank Sum Test results are shown in Table 21.

Table 21: Statistical Analysis Results for %EVA of Foreign Institutional Ownership

Signed-Rank Test (Paired-Sample)	Diff (For-Loc)
Sample Statistics	
Sample Size	35
Sample Mean	-1.015128259
Sample Std. Dev.	8.149382026
Sample Median	0.835821056
p-Value Computation	
p-Value	0.8123
Significance Levels	
Null Hypoth. at 10% Significance	Don't Reject
Null Hypoth. at 5% Significance	Don't Reject
Null Hypoth. at 1% Significance	Don't Reject

The null hypothesis could not be rejected; therefore, the difference was not statistically significant.

5.5.4 Foreign institutional ownership and %MKVAL: Hypothesis 2d

The growth in the market as indicated by share price increase/decrease and shares outstanding is summarized by the %MKVAL ratio. The results are shown in Table 22.

Table 22: Descriptive Statistics for the %MKVAL for the Institutional Foreign Ownership Sample

Summary Statistics Institutional Ownership: MKVAL			
One Variable Summary	Foreign Ownership	Local Ownership	Difference (For-Local)
	%MKVAL Total		
Mean	6.74	16.70	-9.96
Variance	1487.41	1660.59	935.95
Std. Dev.	38.57	40.75	30.59
Minimum	-86.15	-63.68	-62.20
Maximum	104.59	118.78	56.40
Range	190.74	182.46	118.60
Count	42	42	42

Locally owned companies showed a 9.96% increased market value growth, compared to their foreign counterparts.

Hypothesis Test

The null hypothesis states that there is no correlation between the average market growth of locally owned firms ($LOC_{\%MKVAL}$) and the average market growth of foreign-owned institutional firms ($FORINST_{\%MKVAL}$). The alternative hypothesis states that there is a significant difference between the average market growth of locally owned firms ($LOC_{\%MKVAL}$) and the average market growth of foreign-owned institutional firms ($FORINST_{\%MKVAL}$).

H_0: $\quad FORINST_{\%MKVAL} - LOC_{\%MKVAL} = 0$

H_a: $\quad FORINST_{\%MKVAL} - LOC_{\%MKVAL} \neq 0$

The null hypothesis of the normality test could not be rejected, therefore the data were normally distributed.

The results of the parametric T-test are shown in Table 23.

Table 23: Statistical Analysis Results for %MKVAL of Foreign Institutional Ownership

Hypothesis Test (Paired-Sample)	Diff (For-Loc)
Sample Size	42
Sample Mean	-9.96
Sample Std Dev	30.59
p-Value	0.041
Null Hypoth. at 10% Significance	Reject
Null Hypoth. at 5% Significance	Reject
Null Hypoth. at 1% Significance	Don't Reject

The null hypothesis was rejected at a 95% confidence level; therefore, the difference between the two data sets was statistically significant. Locally owned companies showed increased growth, compared to foreign-owned institutional companies.

5.5.5 Summary

The salient results for the evaluation are summarised in Table 24.

Table 24: Summary of the Influence of Foreign Institutional Ownership

Variable	Difference (For - Loc)	P-Value	Null Hypothesis
ROA	-2.6%	0.06	Don't Reject
ROE	-0.6%	0.77	Don't Reject
%EVA	-1.0%	0.81	Don't Reject
%MKVAL	-10.0%	0.04	Reject

The results indicate that there was statistically no difference between the financial performance of foreign-owned institutional firms and locally owned firms. The market growth of locally owned firms did however show an increase, compared to that of foreign-owned institutional firms, and was statistically significant.

5.6 Foreign Corporate Ownership Influence: Hypothesis 3

For the foreign corporate ownership sample, there had to be a controlling foreign owner with more than 50% ownership.

All the data were collated in a similar manner to that explained for Hypotheses 1 and 2 above, and the same techniques for identifying and removing outliers were used. Table 25 shows the summary of data removal for each performance measure.

Table 25: Summary of Data Removed

Measure	Original Data Set	Final Data Set	% Rejected
ROA	40	37	7.5%
ROE	40	36	10.0%
%EVA	40	38	5.0%
%MKVAL	39	38	2.6%

Rejection rates were within acceptable limits. All the original data sets, Box-Whisker Plot results, normality test results and outliers removed are shown in Appendix 4 for each measure.

5.6.1 Foreign corporate ownership and ROA: Hypothesis 3a

Table 26 gives an overview of the explanatory results for the ROA final data set.

Table 26: Descriptive Statistics for the ROA for the Corporate Foreign Ownership Sample

Summary Statistics Corporate Ownership: ROA			
Variable Summary	Foreign Ownership	Local Ownership	Difference
	ROA Total		(For-Local)
Mean	13.1	13.7	-0.6
Variance	67.3	100.1	55.9
Std. Dev.	8.2	10.0	7.5
Minimum	5.3	2.5	-20.8
Maximum	35.9	36.9	12.8
Range	30.6	34.3	33.6
Count	37	37	37

The summary statistics show that there was a 0.6% difference between the foreign-owned corporate and locally owned company data sets, with locally owned firms performing better. The variance was higher for the locally owned dataset than for the foreign-owned data set.

Hypothesis Test

The null hypothesis states that there is no correlation between the average ROA of locally owned firms (LOC_{ROA}) and the average ROA of foreign-owned corporate firms ($FORCOR_{ROA}$). The alternative hypothesis states that there is a significant difference between the average ROA of locally owned firms (LOC_{ROA}) and the average ROA of foreign-owned corporate firms ($FORCOR_{ROA}$).

H_0: $\quad FORCOR_{ROA} - LOC_{ROA} = 0$

H_a: $\quad FORCOR_{ROA} - LOC_{ROA} \neq 0$

The null hypothesis of the normality test was rejected; therefore, the data were not normally distributed. The non-parametric Wilcoxon Signed-Rank Sum Test results are shown in Table 27.

Table 27: Statistical Analysis Results for ROA of Foreign Corporate Ownership

Signed-Rank Test (Paired-Sample)	Diff (For-Loc)
Sample Statistics	
Sample Size	37
Sample Mean	-0.63
Sample Std. Dev.	7.48
Sample Median	1.51
p-Value Computation	
p-Value	0.7173
Significance Levels	
Null Hypoth. at 10% Significance	Don't Reject
Null Hypoth. at 5% Significance	Don't Reject
Null Hypoth. at 1% Significance	Don't Reject

The null hypothesis could not be rejected at a 95% confidence level; therefore, the difference of 0.6% was not statistically significant.

5.6.2 Foreign corporate ownership and ROE: Hypothesis 3b

Table 28 summarises the explanatory results for the ROE final data set.

Table 28: Descriptive Statistics for the ROE for the Corporate Foreign Ownership Sample

Summary Statistics Corporate Ownership: ROE			
One Variable Summary	Foreign Ownership	Local Ownership	Difference
		ROE Total	(For-Local)
Mean	19.9	20.5	-0.5
Variance	131.2	92.2	89.9
Std. Dev.	11.5	9.6	9.5
Minimum	-4.8	5.8	-15.7
Maximum	49.8	40.5	21.4
Range	54.6	34.7	37.2
Count	36	36	36

The average data showed a 0.5% better ROE for locally owned firms than for the foreign-owned corporate firms.

Hypothesis Test

The null hypothesis states that there is no correlation between the average ROE of locally owned firms (LOC_{ROE}) and the average ROE of foreign-owned corporate firms ($FORCOR_{ROE}$). The alternative hypothesis states that there is a significant difference

between the average ROE of locally owned firms (LOC$_{ROE}$) and the average ROE of foreign-owned corporate firms (FORCOR$_{ROE}$).

H$_0$:   FORCOR$_{ROE}$ - LOC$_{ROE}$ = 0
H$_a$:   FORCOR$_{ROE}$ - LOC$_{ROE}$ ≠ 0

The high p-value in the normality test indicates that the null hypothesis could not be rejected with a 95% confidence level; therefore, the data were normally distributed. The summary results from the parametric T-test are shown in Table 29.

Table 29: Statistical Analysis Results for ROE of Foreign Corporate Ownership

Hypothesis Test (Paired-Sample)	Diff (For-Loc)
Sample Size	36
Sample Mean	-0.52
Sample Std Dev	9.48
Hypothesized Mean	0
Alternative Hypothesis	<> 0
p-Value	0.7463
Null Hypoth. at 10% Significance	Don't Reject
Null Hypoth. at 5% Significance	Don't Reject
Null Hypoth. at 1% Significance	Don't Reject

The null hypothesis could not be rejected; therefore, there was no statistically significant difference between the two average ROE values.

5.6.3 Foreign corporate ownership and EVA®: Hypothesis 3c

The summary of the data (Table 30) indicates that the foreign-owned corporate companies on average had a 4.6% higher %EVA than locally owned companies.

Table 30: Descriptive Statistics for the %EVA for the Corporate Foreign Ownership Sample

Summary Statistics Corporate Ownership: %EVA			
One Variable Summary	Foreign Ownership	Local Ownership	Difference
	%EVA Total		(For-Local)
Mean	4.36	-0.21	4.56
Variance	56.14	30.19	61.66
Std. Dev.	7.49	5.49	7.85
Minimum	-28.24	-15.84	-12.40
Maximum	20.63	13.69	23.53
Range	48.87	29.53	35.92
Count	38	38	38

Hypothesis Test

The null hypothesis states that there is no correlation between the average %EVA of locally owned firms ($LOC_{\%EVA}$) and the average %EVA of foreign-owned corporate firms ($FORCOR_{\%EVA}$). The alternative hypothesis states that there is a significant difference between the average %EVA of locally owned firms ($LOC_{\%EVA}$) and the average %EVA of foreign-owned corporate owned firms ($FORCOR_{\%EVA}$).

$$H_0: \quad FORCOR_{\%EVA} - LOC_{\%EVA} = 0$$
$$H_a: \quad FORCOR_{\%EVA} - LOC_{\%EVA} \neq 0$$

The null hypothesis for the normality test could not be rejected; therefore, the data were normally distributed. The parametric T-test results are shown in Table 31.

Table 31: Statistical Analysis Results for %EVA of Foreign Corporate Ownership

Hypothesis Test (Paired-Sample)	Diff (For-Loc)
Sample Size	38
Sample Mean	4.56
Sample Std Dev	7.85
Hypothesized Mean	0
Alternative Hypothesis	<> 0
p-Value	0.0010
Null Hypoth. at 10% Significance	Reject
Null Hypoth. at 5% Significance	Reject
Null Hypoth. at 1% Significance	Reject

The null hypothesis could be rejected at a 95% and 99% confidence level; therefore, the difference was statistically significant.

5.6.4 Foreign corporate ownership and %MKVAL: Hypothesis 3d

The growth in the market as indicated by share price growth/depreciation and shares outstanding is summarized by the %MKVAL ratio. The summarised results are shown in Table 32.

Table 32: Descriptive Statistics for the %MKVAL for the Corporate Foreign Ownership Sample

Summary Statistics Corporate Ownership: MKVAL			
One Variable Summary	Foreign Ownership	Local Ownership	Difference
	%MKVAL Total		(For-Local)
Mean	21.93	22.16	-0.23
Variance	1623.01	1287.35	371.68
Std. Dev.	40.29	35.88	19.28
Minimum	-48.24	-43.10	-39.20
Maximum	122.90	143.30	54.09
Range	171.14	186.40	93.29
Count	38	38	38

The mean data show that there was only a small percentage difference of 0.23% between the two data sets.

Hypothesis Test

The null hypothesis states that there is no correlation between the average market growth of locally owned firms ($LOC_{\%MKVAL}$) and the average market growth of foreign-owned corporate firms ($FORCOR_{\%MKVAL}$). The alternative hypothesis states that there is a significant difference between the average market growth of locally owned firms ($LOC_{\%MKVAL}$) and the average market growth of foreign-owned corporate firms ($FORCOR_{\%MKVAL}$).

H_0: $FORCOR_{\%MKVAL} - LOC_{\%MKVAL} = 0$

H_a: $FORCOR_{\%MKVAL} - LOC_{\%MKVAL} \neq 0$

The null hypothesis for the normality test could not be rejected; therefore, the data were normally distributed.

The results of the parametric T-test are shown in Table 33.

Table 33: Statistical Analysis Results for %MKVAL of Foreign Corporate Ownership

Hypothesis Test (Paired-Sample)	Diff (For-Loc)
Sample Size	38
Sample Mean	-0.23
Sample Std Dev	19.28
Hypothesized Mean	0
Alternative Hypothesis	<> 0
p-Value	0.9411
Null Hypoth. at 10% Significance	Don't Reject
Null Hypoth. at 5% Significance	Don't Reject
Null Hypoth. at 1% Significance	Don't Reject

The null hypothesis could not be rejected at a 95% confidence level; therefore, the difference between the two data sets was not statistically significant.

5.6.5 Summary

The salient results for the evaluation are summarised in Table 34.

Table 34: Summary of the Influence of Foreign Corporate Ownership

Variable	Difference (For - Loc)	P-Value	Null Hypothesis
ROA	-0.6%	0.72	Don't Reject
ROE	-0.5%	0.75	Don't Reject
%EVA	+4.6%	0.001	Reject
%MKVAL	-0.2%	0.94	Don't Reject

The results indicate there was no difference between foreign-owned corporate and locally owned firms in terms of their ROA, ROE and %MKVAL. There was, however, a fairly significant increase of 4.6% in EVA$^®$ for the corporate foreign-owned companies, as compared to the locally owned companies, and this difference was statistically significant.

5.7 Foreign Ownership Influence on %Investor Return: Hypothesis 4

To evaluate Investor Return (%IR), the companies in each of the ownership models were combined into individual share portfolios. A nominal value of R10 000 was invested into each portfolio on an equally weighted basis, and the performance was

tracked over a three-year period from 2008 to 2010. All dividend returns were re-invested into the same share.

No data was removed from the data set, original data shown in Appendix 5.

5.7.1 Foreign institutional ownership and %Investor Return: Hypothesis 4a

The performance of the institutional firms is shown in Figure 9.
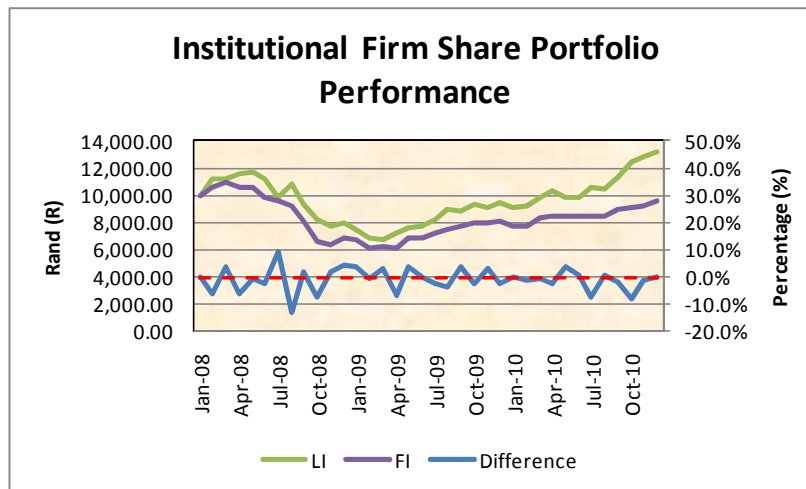
Figure 9: Foreign Institutional Share Portfolio Performance

The cumulative growth shows that the locally owned firms outperformed their foreign counterparts by over R3 600 over the period, or by 36%.

The summary of the statistics of the monthly performance is given in Table 35.

Table 35: Institutional Share Portfolio Summary Statistics

Summary Statistics Institutional Ownership: Share Portfolio Performance			
One Variable Summary	Foreign Ownership	Local Ownership	Difference
	Portfolio Total		(For-Local)
Mean	-0.13	0.76	-0.89
Variance	32.23	43.11	19.84
Std. Dev.	5.68	6.57	4.45
Minimum	-19.37	-15.29	-13.08
Maximum	9.83	11.60	9.25
Range	29.21	26.90	22.33
Count	36	36	36

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Table 35 shows that there was, on average, a 0.89% lower investor return per month when investing in foreign-owned institutional firms.

Hypothesis Test

The null hypothesis states that there is no correlation between the average investor return of locally owned firms ($LOC_{\%IR}$) and the average investor return of foreign-owned institutional firms ($FORINST_{\%IR}$). The alternative hypothesis states that there is a significant difference between the average investor return of locally owned firms ($LOC_{\%IR}$) and the average investor return of foreign-owned institutional firms ($FORINST_{\%IR}$).

H_0: $FORINST_{\%IR} - LOC_{\%IR} = 0$

H_a: $FORINST_{\%IR} - LOC_{\%IR} \neq 0$

The *p*-value from the normality test indicates that the null hypothesis could not be rejected; therefore, the data were normally distributed.

The results from the parametric T-test are shown in Table 36.

Table 36: Statistical Analysis Results from the Evaluation of the Monthly Performance of the Institutional Firm Data Set

Hypothesis Test (Paired-Sample)	Diff (For-Loc)
Sample Size	36
Sample Mean	-0.89
Sample Std Dev	4.45
p-Value	0.2386
Null Hypoth. at 10% Significance	Don't Reject
Null Hypoth. at 5% Significance	Don't Reject
Null Hypoth. at 1% Significance	Don't Reject

The null hypothesis could not be rejected; therefore, the monthly performance was statistically the same for the two portfolios.

5.7.2 Foreign corporate ownership and %Investor Return: Hypothesis 4b

The performance of the corporate firms is shown in Figure 10.
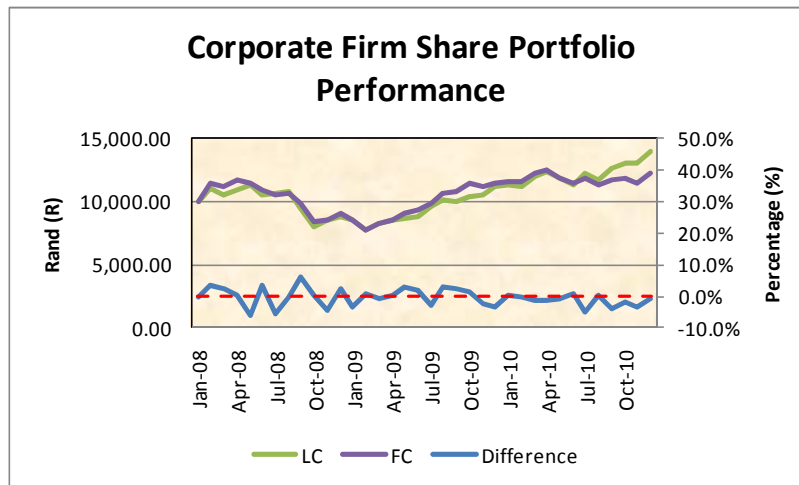
Figure 10: Foreign Corporate Share Portfolio Performance

The difference is R1 744 or 17.4%, with the locally owned firms performing better than the foreign-owned firms. The differences between the two performances seem to vary around the zero up to the middle of 2010; from then on, it seems that the locally owned companies consistently performed better.

The summarised statistics for the monthly performance are shown in Table 37.

Table 37: Corporate Share Portfolio Summary Statistics

Summary Statistics Corporate Ownership: Share Portfolio Performance			
One Variable Summary	Foreign Companies	Local Companies	Difference
	Portfolio Total		(For-Local)
Mean	0.56	0.93	-0.37
Variance	32.59	37.57	8.17
Std. Dev.	5.71	6.13	2.86
Minimum	-16.20	-16.61	-5.83
Maximum	14.26	10.70	6.29
Range	30.46	27.31	12.12
Count	36	36	36

It can be seen that the locally owned firms showed a 0.37% monthly improvement on investor return.

Hypothesis Test

The null hypothesis states that there is no correlation between the average investor return of locally owned firms (LOC$_{\%IR}$) and the average investor return of foreign-owned corporate firms (FORCORP$_{\%IR}$). The alternative hypothesis states that there is a

significant difference between the average investor return of locally owned firms ($LOC_{\%IR}$) and the average investor return of foreign-owned corporate firms ($FORCORP_{\%IR}$).

$$H_0: \quad FORCORP_{\%IR} - LOC_{\%IR} = 0$$
$$H_a: \quad FORCORP_{\%IR} - LOC_{\%IR} \neq 0$$

The *p*-value indicates that the null hypothesis could not be rejected; therefore, the data were normally distributed.

The results from the parametric T-test are shown in Table 38.

Table 38: Statistical Analysis Results from the Evaluation of the Monthly Performance of the Corporate Firm Data Set

Hypothesis Test (Paired-Sample)	Diff (For-Loc)
Sample Size	36
Sample Mean	-0.37
Sample Std Dev	2.86
p-Value	0.4423
Null Hypoth. at 10% Significance	Don't Reject
Null Hypoth. at 5% Significance	Don't Reject
Null Hypoth. at 1% Significance	Don't Reject

The null hypothesis could not be rejected; therefore, the monthly performance of the two portfolios is statistically the same.

5.7.3 Summary

The summary of the share portfolio performances is shown in Table 39.

Table 39: Summary of the Share Portfolio Performances

Variable	Difference (For - Loc)	P-Value	Null Hypothesis
Institutional Firms	-0.89%	0.44	Don't Reject
Corporate Firms	-0.37%	0.24	Don't Reject

CHAPTER 6:
DISCUSSION OF RESULTS

6.1 Introduction

The fundamental question that this research aims at answering through the development of the four hypotheses was the following: "Do foreign-owned firms in South Africa display superior financial, market and investor return performance compared to locally owned firms?"

To answer this question, the discussion in this chapter is structured according to the hypothesis results given in Chapters 5. This chapter thus discusses the results in the order in which they are presented in the previous chapter.

The discussion focuses on (a) the data used, (b) the performance of foreign-owned firms in an aggregate environment compared to that of locally owned firms, (c) the performance of foreign-owned institutional firms compared to that of locally owned firms, (d) the performance of foreign-owned corporate firms compared to that of locally owned firms, and (e) the shareholder or investor return from foreign-owned firms compared to the investor return from locally owned firms.

6.2 Data Analysis

An analysis of the ALSI on 31 December 2010 according to the criteria set out in Section 4 identified 23 possible foreign-owned firms for inclusion of the study. Only 18 pairs could be connected for further analysis. From the 18 company pairs, there were 92 data points available for analysis. The literature showed that there are three main influences that could affect the financial performance of firms under foreign ownership:

- Ecer et al. (2011) note the influence of various sectors within an economy as important. They show that if the economy is analysed as a whole, the results could suffer from an aggregate bias. Foreign ownership differs for different sectors within an economy. Due to the lack of data, the aggregate South African sample of foreign firms could not be disaggregated into different sectors.

- Chen (2010) has shown that the source or origin of the foreign investor is important and affects the performance of the firms concerned. However, due to the limited data sets, the sample could not be split to reflect ownership origin.

- The concentration of ownership was also identified as a possible influence on the efficiency of foreign ownership performance (Jensen & Meckling, 1976). This influence was supported by other studies as one of the major influences on foreign firm performance (Chhibber & Majumdar, 1999; Douma et al., 2006).

The original data set only allowed for the data to be disaggregated according to the ownership concentration. The two ownership concentrations were defined as institutional ownership and corporate ownership. Institutional ownership refers to less than 50% foreign ownership, with no controlling owner, and corporate ownership was defined as ownership greater than 50%, with a controlling owner.

The institutional data set consisted of 11 firm pairings, with 52 data points, and the corporate data set was comprised of seven firm pairings, with 40 data points. One of the biggest limitations of the study is the low number of data points. Given that firm performance is generally influenced by many factors, there is a danger that single firm performance in a small data set could affect the results and cause bias.

6.3 Performance of Foreign-Owned Firms

The aim of Hypothesis 1 was to ascertain whether in the aggregate foreign-owned sample there was any evidence that foreign-owned firms outperformed locally owned firms in terms of the four measures used in the study, namely ROA, ROE, %EVA and %MKVAL (where %MKVAL was used as a proxy for the market growth of the firms).

6.3.1 Effect of foreign ownership on traditional financial indicators

The null hypothesis (H_0) stated that there is no difference between the average ROA and ROE of foreign-owned firms and those of locally owned firms. The results summarized in Tables 6 and 8 show that for both ROA and ROE, the locally owned firms performed better than the foreign-owned firms, with a 2.0% and 0.1% improvement respectively for ROA and ROE. However, these improvements were not shown to be statistically significant; therefore there is no significant difference between foreign-owned and locally owned firms' performance pertaining to ROA and ROE. This finding is in line with that of Mihai (2012), who investigated the effect of foreign ownership on a sample of Romanian firms, and also found that there was no difference between the two sample sets in respect of the financial indicators of ROA and ROE.

Although this finding was in line with Mihai's findings, it contradicts the results of many other studies that did show more positive financial performance for foreign firms (Chhibber & Majumdar, 1999; Gurbuz & Aybars, 2010; Uwalomwa & Olamide, 2012). However, as Tam and Tan (2007) argue, the differences in the literature could be due to differences in the socio-economic policies, laws, regulations and operating environments of different countries. Therefore evidence must be looked at for each country individually, rather than to try to establish a uniform trend in the literature.

One of the reasons that the theory of superior foreign-owned firms' performance does not hold in the South African context could be that the technological and management gap between the investor country of origin and South Africa's level is not large enough to facilitate benefit transfer (Gorg & Greenaway, 2004). A second reason could be the fact that this initial analysis aggregated the results and did not distinguish between countries of origin, ownership models or sector of operation, which have all been shown to affect the performance differences that could be expected from foreign ownership (Douma et al., 2006; Ford et al., 2008; C. Wang et al., 2009).

6.3.2 Effect of foreign ownership on Economic Value Added

The data set out in Table 10 indicate that foreign-owned firms perform on average 1.9% better than local firms with regard to the %EVA movement. The difference was shown to be statistically significant. The average for the %EVA for foreign-owned firms is also positive, which indicates that additional value above the expectations of the shareholders was created (Kaur & Narang, 2009).

By contrast, the average performance of locally owned firms was negative; thus they are destroying value by producing returns below the expectations of locally owned firms. However, the analysis did not include the difference between the expected returns of the firms, represented by the WACC. The EVA® calculation uses the WACC to calculate the value added (L. Chari, 2009). The analysis shows that the average WACC for the foreign-owned firm data set was 10.9%, compared to the 12.0% for the locally owned firm data set. This indicates that the locally owned firms in the data set are perceived to be more risky than the foreign-owned firms. The shareholders of locally owned firms required a higher return than those of the foreign-owned firms. This could explain the difference, because EVA® is calculated from a lower base for the foreign-owned firms.

6.3.3 Effect of foreign ownership on market growth

The results as summarised in Table 12 indicate that the locally owned firms perform, on average, 6% better than their foreign-owned counterparts. The statistical analysis showed that this difference is significant; therefore, the locally owned firms are performing better. Two possible reasons for this finding can be proposed – first, that locally owned firms could use their local knowledge of market performance and trends to their advantage; second, it is possible that there was a data anomaly arising from the limited number of data points, as shown from the high number of outliers.

The data from Table 12 suggests that the spread of growth for foreign-owned companies is from -86% to +123% and between -63% and +143% for locally owned companies. The variance is also very high, between 1 400% and 1 500% respectively. With the previous indicators (ROA and ROE), the firm dictates the results; however, for market value growth, the share price is also influenced by market sentiment and external macro forces. One of the limitations of the study, as highlighted in Section 4.8, is the low number of data pairs. With the large variance in the data set, the number of data points may not be adequate to define the average movement, which may be a classical example of a Type I error or a false positive where a relationship is concluded when in fact there is none. The number of outliers discarded was also high and their influence may be significant. If the outliers are included, then the trend reverses and foreign-owned companies perform better. This result should therefore be seen as inconclusive.

6.3.4 Aggregate foreign ownership summary

The result from the aggregate sample is inconclusive regarding the effect of foreign ownership. The traditional financial data indicate that there is no difference between the performance of firms under foreign ownership and local ownership. The economic value add proxy %EVA indicates that foreign ownership does result in higher value added. This would support the literature that suggests that foreign ownership results in higher returns at the firm level. A concern that should be raised is, however, that the WACC used to calculate the EVA® is 1.1% lower in absolute terms for the foreign-owned firms than for the locally owned firms, and this would affect the %EVA®, because EVA® is calculated as the value above the expected return.

The finding regarding the growth in market value was the opposite of what was postulated by theory. Locally owned firms performed better by 6%, compared to the foreign-owned firms. This was not expected, based on the results of previous studies. One reason for this phenomenon could be a data anomaly, with a typical Type 1 error. The variance is very high for the data set, because share prices are affected not only by the underlying value, but also by market sentiment. The data pairs may not be enough to describe the data average adequately.

6.4 Performance of Foreign-Owned Institutional Firms

Douma et al. (2006) have showed that disaggregation of ownership is required to review the effect of foreign ownership as the investment motive, and influence is different for the two ownership models, institutional and corporate.

They divided their data set in the study into institutional and corporate ownership. An institutional owner is typically a shareholder with no intention of getting involved in the operations of the firm, in this case, one with less than 50% ownership. A corporate shareholder, by contrast, is actively involved in management and operations and holds a controlling stake in the business, above 50%.

Hypothesis 2 reviewed the differences between the foreign-owned institutional firms and locally owned firms' performance using the same measures as those used to test Hypothesis 1.

6.4.1 Effect of foreign institutional ownership on traditional financial indicators

The null hypothesis (H_0) stated that there is no difference between the average ROA and ROE of foreign-owned institutional firms and those of locally owned firms.

Both averages indicate that the locally owned firms' performance was higher than that of the foreign-owned firms for both ROA and ROE; the average increase was 2.5% and 0.6% respectively. The statistical tests, however, showed that these increases were not statistically significant, so the null hypothesis was accepted, in that there is no difference between the averages. This finding is in line with that of Douma et al. (2006), who argue that institutional owners do not get involved with operational issues,

and therefore one should not expect any differences between institutional companies, irrespective of their ownership model.

6.4.2 Effect of foreign institutional ownership on Economic Value Added

Table 20 shows that the foreign-owned institutional companies performed 1.02% worse than locally owned firms. On average, they destroyed more value than their locally owned counterparts. However, this difference was shown not to be statistically significant; therefore there was no significant difference between the two averages. As discussed above, this result confirmed the findings of Douma et al. (2006) that there should be no difference between institutional ownership performances. When the WACC was reviewed, it was found to be similar for both data sets at 12.5% and 12.1% respectively for the foreign-owned institutional firms and locally owned firms.

6.4.3 Effect of foreign institutional ownership on market growth

The results in Table 22 indicate that the locally owned firms performed on average 10% better in terms of market growth than the foreign-owned institutional firms. Statistical analysis showed that this is statistically significant. As discussed in Section 6.3.3, this result was unexpected, given the financial performance of the firms. The variances were very high, due not only to market movements but also to investor sentiment. However, with the small sample size, this could be false positive or Type I error. From Table 15 it can be seen that over 17% of the original data set was rejected as outliers. If these outliers are included, then the trend actually reverses and foreign-owned institutional firms performed 10% better than their locally owned counterparts.

It can therefore be concluded that the original hypothesis that locally owned firms may have an advantage due to their local knowledge is not correct, as both sets of institutional firms had the same knowledge, therefore the difference may be due to a data anomaly resulting from the low number of data points.

6.4.4 Foreign institutional ownership summary

The financial results (ROA, ROE and %EVA) indicate that there is no difference between institutional foreign ownership and local ownership. This result is in line with the literature, which also showed that institutional ownership did not add value, as

these shareholders are not interested in getting involved in the management or transfer of benefits to the company. As Douma et al. (2006) explain, an institutional owner is more interested in an exit strategy than in transferring knowledge.

The increased market growth shown by locally owned firms as compared to foreign-owned institutional firms is seen as an anomaly rather than as a true trend. Share prices are affected by market sentiment and external macro forces and are not always a true reflection of the underlying value. In the data analysis, 17% of the data were removed as outliers. This is a very high percentage, and could have introduced bias.

6.5 Performance of Foreign-Owned Corporate Firms

Hypothesis 3 investigated the effect of foreign corporate ownership on a firm's performance.

6.5.1 Effect of foreign corporate ownership on traditional financial indicators

The null hypothesis (H_0) states that there is no difference between the average ROA and ROE of foreign-owned corporate firms and that of locally owned firms.

The results for Hypothesis 3 in Section 5.6.1 and 5.6.2 show that there is statistically no difference between the ROA and ROE of foreign-owned corporate firms and those of locally owned firms. This finding contradicts the findings of Chhibber and Majumdar (1999) and Douma et al. (2006), who found that corporate ownership did improve the financial performance of foreign firms. The current findings are, however, not revolutionary, as there are a number of other studies that also found no benefit from corporate ownership (Gurbuz & Aybars, 2010).

6.5.2 Effect of foreign corporate ownership on Economic Value Added

The results from Section 5.6.3 indicate that there was a 4.6% increase in %EVA for foreign-owned corporate firms. The statistical analysis showed that this difference is significant even at the 99% confidence level. This shows that foreign corporate firms, through increased efficiency, either through management or technology, seem to use their invested capital better. The results are also in line with agency theory, which

states that the larger the ownership concentration, the better the performance should be, as the owners are more able to monitor and align management to set objectives (Margaritis & Psillaki, 2010).

In the calculation of EVA$^®$, the WACC plays a major role. EVA$^®$ is the monetary value of profit greater or less than the expected return, as indicated by WACC (Sharma & Kumar, 2010). As discussed in Section 6.3.2 there was a difference in the WACC percentages for the two data sets. The average WACC for the foreign-owned corporate sample is 8.9%, versus the 11.9% WACC for the locally owned firms. The lower base of the WACC for foreign-owned firms would show a positive EVA$^®$ at lower returns, as it starts from a lower base. The difference may therefore be only an accounting difference rather than true values add.

6.5.3 Effect of foreign corporate ownership on market growth

The results from Table 32 indicate that there is a small difference between the performance of foreign-owned corporate and locally owned firms. The statistical analysis (See Table 33) showed that this difference is not significant; it can therefore be assumed that the two averages are the same.

6.5.4 Summary of foreign corporate ownership

The traditional financial indicators ROA and ROE showed no difference between the financial performance of foreign-owned corporate and locally owned firms. This result contradicts the research findings of Chhibber and Majumdar (1999) and Douma et al. (2006), who showed that foreign-owned corporate firms added financial value. However the %EVA increases was found to be significantly larger for the foreign-owned corporate firms than for the locally owned firms. The main benefit of using EVA$^®$ is that it is free from accounting discrepancies, as it corrects for them (Anderson et al., 2004). However, it was shown that foreign-owned corporate firms' WACC was 3% lower than that of their locally-owned counterparts. Because EVA$^®$ is dependent on the additional revenue above the WACC, this could affect the results. There was no difference in market growth between the two ownership models. With no difference between the traditional financial indicators, there would be no reason for the market to value them differently.

6.6 Investor Return

Hypothesis 4 looked at the net effect of any investor return into each of the ownership models, foreign institutional ownership firms and their locally owned pairing and foreign corporate ownership firms and their locally owned pairing.

6.6.1 Investor return on foreign institutional firms

The portfolio that was created was an equally weighted portfolio for each of the two company sets, with an initial investment of R10 000 on 1 January 2008. The results in Figure 9 indicate that locally owned firms produced a higher return than the foreign-owned institutional firms. The foreign-owned portfolio decreased over the three years to R9 545 and the local portfolio increased to R13 150. The FI/LI trend line indicates that there is a consistent bias between the two data sets, with FI consistently higher. However, the statistical analysis of the monthly returns indicates that the difference was not significant. Although it was not statistically significant, it was material, with a final difference of R3 600. From Figure 11 it can be seen that the difference on a cumulative basis arose from individual high performing months in February 2008, September 2008, July 2010 and October 2010, rather than from a continuous trend.
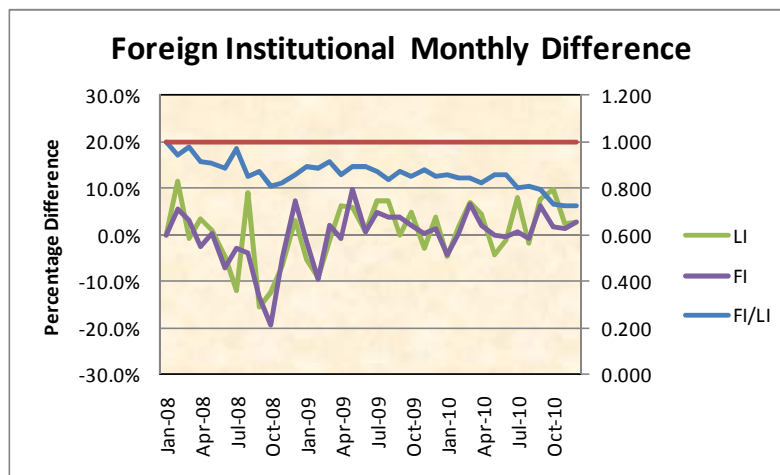
Figure 11: The Monthly Differences for Each of the Institutional Portfolios

6.6.2 Investor return on foreign corporate firms

As with the institutional firms, an equally weighted portfolio was created for each of the foreign-owned corporate firms and their locally owned data pair, with a R10 000

investment on 1 January 2008. From Figure 10, it is clear that there is no difference between the two portfolios up to the middle of 2010. After June 2010, the locally owned portfolio outperformed the foreign-owned corporate portfolio, clearly indicated by the FC/LC ratio line. However, for the complete period, the statistical analysis shows that there was no difference between the two portfolios. The monthly differences are shown in Figure 12.
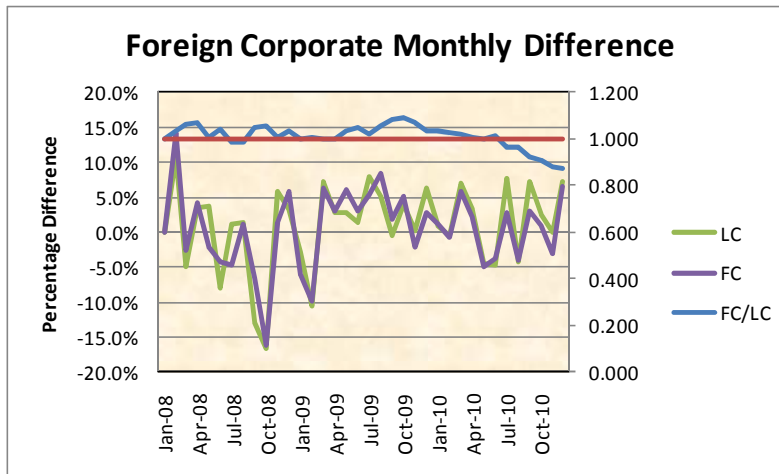
Figure 12: The Monthly Differences for Each of the Corporate Portfolios

6.6.3 Investor return summary

The results from the four portfolios show that there was statistically no difference between the portfolios. The foreign-owned institutional portfolios did show that there was a material difference between the overall performances of the two portfolios, with the locally owned firms outperforming the foreign-owned firms, but it was shown that this difference was due to a number of outlier months, rather than a trend.

CHAPTER 7:

CONCLUSION

7.1 Introduction

This chapter summarises the salient results from the research as shown and discussed in the previous two chapters. It provides some recommendations for role players and also recommendations for future work.

7.2 Findings and Salient Results

7.2.1 Data analysis

The research period was limited to seven years from 2010 back to 2004, due to the limitations of firm level data and ownership data prior to 2004. Based on the 2010 ALSI composition, 18 foreign-owned firms were identified and paired with similar locally owned firms. The biggest limitation identified in the work was the limited data points for analysis. Overall, only 92 data points were collected from the paired analysis method. The paired analysis methodology was chosen to eliminate external forces on firms and create a comparative basis for the analysis.

Previous work on the topic of foreign ownership and financial performance highlighted three main factors that influence the effectiveness of foreign ownership. First, economies need to be segregated into different sectors, as firms perform differently in each sector. Second, the origin of the foreign ownership is important, as it plays a role in the financial performance of the foreign-owned firm. Third, the concentration of foreign ownership in the firm plays a major role in its performance.

Due to the limited data, the original data set was only disaggregated according to the foreign ownership concentration, as it was identified as potentially having the largest influence. The low number of data points prevented further splicing and is seen as the biggest limitation of the study.

7.2.2 Overall foreign ownership performance

The theory states that foreign ownership brings financial benefit to locally owned firms through improved management systems and access to better technology, to mention a

few. This theory was tested in the South African context by reviewing the financial performance of South African listed firms with local and foreign ownership. A review of the aggregate firm sample results indicates that there was statistically no difference between the financial performance of foreign-owned and locally owned firms in terms of their ROE and ROA. Although there has been some criticism of the use of traditional financial measures, it was found in the literature that these measures were still the most commonly used measures to describe a firm's financial performance. The aggregate sample was spliced into institutional and corporate ownership models as the investment rational is different for each of the models and therefore the results could be different. It was however shown that there is no benefit in terms of ROE or ROA for either the institutional or corporate ownership models.

Using the more modern ratio EVA$^®$ to describe the economic value added by a firm above what is expected from its shareholders, it was shown on the aggregate sample that foreign-owned firms outperformed their local counterparts by 1.9%. The data review, however, indicated that the foreign-owned firms had a 1.1% lower WACC (based on the individual firms' risk and debt levels) than their locally owned counterparts. Because EVA$^®$ is calculated as the monetary return above the expected return, the foreign-owned firms' value added was calculated from a lower base. The apparent improvement may therefore be a result of an accounting anomaly and not a true improvement. Looking at the institutional firms, it was shown that the %EVA was the same for both foreign-owned and locally owned firms from a similar WACC base. This result was anticipated – the foreign institutional owners were not expected to add any benefit to the operation of the company, because they are interested in financial returns and not a transfer of knowledge. By contrast, the corporate ownership models show a 4.6% improvement for foreign-owned firms, as compared to their locally owned counterparts in %EVA return. This is thus some evidence that the theory that foreign owners bring additional benefits to firms holds true in the South African context. The concern raised in the analysis of the data is that this improvement is from a much lower WACC base, which is the crux of the EVA$^®$ calculation. The WACC for foreign-owned corporate firms was 3% lower than that of their locally owned counterparts. It is therefore unclear whether the benefit is due to improved operational aspects or just due to accounting differences.

One of the main reasons for the postulated benefit of foreign ownership is the understanding that there needs to be technological gap between the two economies to facilitate the transfer of benefits (Gorg & Greenaway, 2004). Thus the main reason for

the lack of proven benefits could be the fact that there is not a big enough technological gap between the investor economies and the South African economy.

The market return showed results opposite to what was shown by the financial review. Overall, the results indicated that locally owned firms performed better than their foreign counterparts, with a 6% higher market growth, as measured by %MKVAL. It was originally hypothesised that this could be due to two reasons. The first reason was that locally owned firms have a better knowledge of local market forces; however, after reviewing the spliced data for institutional and corporate firms, it was shown that the growth for the aggregate sample came from the 10% growth in the institutional sample (the corporate sample of firms showed no difference). Given that influence from the foreign investor in foreign-owned institutional firms is unlikely, it was expected that both sets of firms would perform in a similar way, as their knowledge of local market forces was the same. Therefore, the second hypothesised reason for the difference, namely that it is more likely to be a data anomaly, is more probable. The variance in the data was shown to be very high, as not only firm performance, but also market sentiment and external macro forces play a role in share prices, which affect market growth. Due to this high variance in the data, over 10% of the original data were discarded as outliers. If these outliers were included, the trend would actually reverse and foreign-owned firms would have shown an improved growth rate. The market growth data were therefore seen as inconclusive.

Investor return showed that the investment portfolios in locally owned firms for both institutional and corporate firms outperformed investment portfolios in their foreign-owned counterparts. However, the difference measured on a monthly basis was found not to be statistically significant; therefore, it can be concluded that the performances are the same.

It can therefore be concluded that, overall, there is no evidence that foreign ownership of South African firms has any financial or secondary benefits. The only benefit shown was the economic value added to shareholders, but this may only be due to an accounting anomaly rather than true values add.

7.3 Recommendations from the study

From the theory of foreign ownership, it is hypothesised that there are three major benefits to foreign ownership. The primary benefit is the influx of new capital into a market and its link to growth (A. Chari et al., 2009; Ngowi, 2001). Secondly, there are financial benefits from improved management and technology, as discussed at length throughout this study. Lastly, there is the spill-over of benefits such as increased wages, technology access and competitiveness (Gorg & Greenaway, 2004; Javorcik, 2004).

Although this work showed that there is limited proof of financial or performance benefit from the foreign ownership of firms in the South African context, the primary benefit of foreign ownership is still significant enough to warrant the South African government's keeping its focus on promoting foreign ownership and FDI into South Africa. It is therefore not recommended that any policies regarding foreign ownership be changed. It is rather recommended that the country's current control of foreign ownership be reviewed to find ways to stimulate additional investment into the country.

7.4 Recommendations for Future Research

This was the first real study into the effects of foreign ownership on firm performance using firm-level data in South Africa, to the knowledge of the researcher. The study has shown that there is no clear conclusion that foreign ownership of South African firms results in better financial or market performance, but it has provided some evidence that foreign ownership may be beneficial to the value adding of firms. The following areas for future research are suggested as potentially valuable in enhancing understanding of the relationship between foreign ownership in South Africa and its perceived secondary and tertiary benefits:

- The current study was limited to the top 160 firms in South Africa, as represented on the ALSI. Paired data can be used to enlarge the study to cover all South African listed companies on both the JSE and ALT-X exchanges over a longer period. Through the use of paired data, the impact of small firms is eliminated, allowing a larger range of companies to be selected. This should increase the data set for a similar study, thereby significantly increasing analytical significance.
- Gorg and Greenaway (2004) indicated that the technological gap between the investor and the invested country is critical for the transfer of benefits. This was also shown to hold true for various sectors within an economy (Ecer et al., 2011).

With this in mind, the larger data set including more firms should be disaggregated into economic sectors. Some sectors in the South African economy could benefit from the hypothesised value add of foreign investment.

- The effect of the origin of the foreign investor also needs to be investigated as this factor contributes to the distance between the investor's technology and the invested countries technology gap.

- The effect of spill-over benefits such as wages, technology, skills, and competition as a tertiary benefit must be investigated. Theory discussed in this study touched on the benefit of these spill-over effects. In the South African context, these benefits are important, as they could have direct policy implications to ensure optimal benefit creation from foreign owners.

References

Aguilera, R. V., & Jackson, G. (2003). The cross-national diversity of corporate governance: Dimension and determinants. *Academy of Management Review, 28*, 447–465.

Albright, S. C., Winston, W. L., & Zappe, C. J. (2009). *Data analysis & decision making* (3rd ed.). Mason, OH: South Western Cengage Learning.

Anderson, A. M., Bey, R. P., & Weaver, S. C. (2004). *Economic value added adjustments: Much to do about nothing*. Paper presented at the Midwest Finance Association Conference, San Antonio, USA.

Ang, J. S., Cole, R. A., & Lin, J. W. (1999). Agency costs and ownership structure. *Journal of Finance, 55*, 81–106.

Bacidore, J. M., Boquist, J. A., Milbourne, T. T., & Thakor, A. V. (1997). The search for the best financial performance measure. *Financial Analysts' Journal, 53*(3), 11–20.

Basti, E., & Akin, A. (2008). The comparative productivity of the foreign-owned companies in Turkey: A Malmquist Productivity Index Approach. *International Research Journal of Finance and Economics, 22*, 58–65.

Bibble, G. C., Bowen, R. M., & Wallace, J. S. (1999). Evidence on EVA. *Journal of Applied Corporate Finance, 12*(2), 69–79.

Carden, A. (2009). Profit and production. *Quarterly Journal of Austrian Economics, 12*(2), 13–26.

Chari, A., Chen, W., & Dominguez, K. M. E. (2009). *Foreign ownership and firm performance: Emerging-market acquisitions in the United States*. NBER Working Paper Series. National Bureau of Economic Research. Retrieved from http://www.nber.org/papers/w14786

Chari, L. (2009). Measuring value enhancement through Economic Value Added: Evidence from literature. *Journal of Applied Finance, 15*(9), 46–62.

Chen, W. (2010). The effect of investor origin on firm performance: Domestic and foreign direct investment in the United States. *Journal of International Economics, 83*, 219–228.

Chhibber, P. K., & Majumdar, S. K. (1999). Foreign ownership and profitability: Property rights, control and the performance of firms in Indian industry. *Journal of Law and Economics, 42, 209-238*. doi: 0022-2186/99/4201-0008501.50

Dahl, J. (2002). *Incentives for foreign direct investment – The case of SDC in the 1990's (No. 81)*. Namibian Economic Policy Research Unit.

Demsetz, H., & Villalonga, B. (2001). Ownership structure and corporate performance. *Journal of Corporate Finance, 7*(3), 209-233. doi: 10.1016/s0929-1199(01)00020-7

Douma, S., George, R., & Kabir, R. (2006). Foreign and domestic ownership, business groups and firm performance: Evidence from a large emerging market. *Strategic Management Journal, 27*(7), 637–657.

Dunning, J. H. (1988). The eclectic paradigm of international production: A restatement and some possible extension. *Journal of International Business Studies, 19*(1), 1–31.

Ebersberger, B., & Loof, H. (2004). Innovation behaviour and productivity performance in the Nordic region: Does foreign ownership matter? Centre of Excellence for Science in Innovation and Studies, Stockholm, Sweden. Retrieved from http://www.ewepa.org/ewepa2005/htmlPages/Ebersberger%20and%20L%F6%F6f_050311.pdf

Ecer, F., Ulutagay, G., & Nasiboglu, E. (2011). Does foreign ownership affect financial performance? An industrial approach. *Middle Eastern Finance and Economics, 14*, 152–166.

Eisenhardt, M. K. (1989). Agency theory: An assessment and review. *Academy of Management Review, 14*(1), 57–74.

Eriksen, B., & Knudsen, T. (2003). Industry and firm level interaction: Implications for profitability. *Journal of Business Research, 56*(3), 191-199. doi: 10.1016/s0148-2963(01)00220-x

Fan, E. X. (2002). *Technology spillovers from foreign direct investment*: Economics and Research Department, Manila, Phillipines, Asian Development Bank.

Ford, T. C., Rork, J. C., & Elmslie, B. T. (2008). Considering the source: Does the country of origin of FDI matter to economic growth? *Journal of Regional Science, 48*(2), 329-357. doi: 10.1111/j.1467-9787.2008.00554.x

Furguson, R., Rentzel, J., & Yu, S. (2006). Trading strategy on EVA and MVA: Are they reliable indicators of future stock performance? *Journal of Investing, 15*(4), 88–94.

Gelübcke, J. P. W. (2011). The performance of foreign affiliates in German manufacturing: Evidence from a new database. *Working Paper Series in Economics*: University of Lüneburg. ISSN 1860-5508.

Ghahroudi, M. R. (2011). Ownership advantages and firm factors influencing performance of foreign affiliates in Japan. *International Journal of Business and Management, 6*(11), 119–137.

Glass, A., & Saggi, K. (1998). International technology transfer and the technology gap. *Journal of Development Economics, 55*(2), 369–398.

Globerman, S., Ries, J. C., & Vertinsly, I. (1994). The economic performance of foreign affiliates in Canada. *Canadian Journal of Economics, 27*(1), 143–156.

Gorg, H., & Greenaway, D. (2004). Much ado about nothing? Do domestic firms really benefit from foreign direct investment? *World Bank Research Observer, 19*(2), 171–197, Oxford University Press. doi: 10.1093/wbro/lk019

Gurbuz, A. O., & Aybars, A. (2010). The impact of foreign ownership on firm performance, evidence from an emerging market: Turkey. *American Journal of Economics and Business Administration, 2*(4), 350–359.

Hake, M. (2008). *Effects of different types of foreign owners on firm performance in Central and Eastern Europe.* Austria: Austrian Institute of Economic Research.

Halkos, G. E., & Tzeremes, N. G. (2011). The effect of foreign ownership on SMEs' performance: An efficiency analysis perspective. *Journal of Productivity Analysis, 34*(2), 167–180. doi: 10.1007/s11123-010-0174-2

Head, K., & Ries, J. (2008). FDI as an outcome of the market for corporate control: Theory and evidence. *Journal of International Economics, 74*(1), 2-20. doi: 10.1016/j.jinteco.2007.04.004

Higgins, R. C. (2009). *Analysis for financial management* (9th ed.). New York, NY: McGraw-Hill.

IndexMundi. (2012). South Africa: Foreign direct investment, Retrieved 3 April, 2012, from http://www.indexmundi.com/facts/south-africa/foreign-direct-investment

Javorcik, B. S. (2004). Does foreign direct investment increase the productivity of domestic firms? In search of spillovers through backward linkages. *American Economic Review, 94*(3), 605–627.

Jensen, M., & Meckling, W. (1976). Theory of the firm: Managerial behavior, agency costs, and ownership structure. *Journal of Financial Economics, 3*(4), 305–360.

Jiang, J. (2007). A study on the relationship between foreign ownership and the performance of Chinese listed companies. Bangkok, China: Bangkok University.

Johnson, R., & Soenen, L. (2003). Indicators of successful companies. *European Management Journal, 21*(3), 364-369. doi: 10.1016/s0263-2373(03)00050-1

JSE. (2008). *JSE Limited listing requirements.* Retrieved 22 February, 2012, from http://www.jse.co.za/Libraries/JSE_-_How_to_list_-_Listings_Requirements_-_Bulletins/2008-04.sflb.ashx

JSE. (2012). *Johannesburg Stock Exchange. Classification System.* Retrieved 22 February, 2012, from http://www.jse.co.za/Products/FTSE-JSE/Classification-System.aspx

Jung, J. C., Beamish, P. W., & Coerzen, A. (2008). FDI ownership strategy: A Japanese-US MNE comparison. *Management International Review, 48*(5), 491-524.

Kalinova, B., Palerm, A., & Thomsen, S. (2010). OECS's FDI Restrictiveness Index: 2010 Update. *OECD Working Paper on International Investment, No 2010/3.*

Kaur, M., & Narang, S. (2009). Shareholder value creation in India's most valuable companies: An empirical study. *Journal of Management Research, 8*(8), 16–42.

Konings, J. (2001). The effect of foreign direct investment on domestic firms: Evidence from firm level panel data in emerging economies. *LICOS Discussion Paper, no 86.*

Laiho, T. (2011). *Agency Theory and ownership structure – Estimating the effect of ownership structure on firm performance.* Masters Degree, Aalto University, Finland. (12497)

Lamb, M., & Sutherland, M. (2010). The components of career capital for knowledge workers in the global economy. *International Journal of Human Resource Management, 21*(1-3), 295–312.

Lilford, E. V. (2006). The corporate cost of capital. *Journal of the South African Institute of Mining and Metallurgy, 106*, 139-146.

Lipsey, R. E. (2004). *Home and host country effects of foreign direct investment. Challenges to globalization: Analyzing the Economics.* National Bureau of Economic Research, University of Chicago Press.

Love, J. H., Roper, S., & Du, J. (2009). Innovation, ownership and profitability. *International Journal of Industrial Organization, 27*(3), 424-434.

Mapuva, J. (2010). The impact of globalization on South Africa's economic development. *Journal of Sustainable Development in Africa, 12*(2), 390–413.

Margaritis, D., & Psillaki, M. (2010). Capital structure, equity ownership and firm performance. *Journal of Banking & Finance, 34*(3), 621-632. doi: 10.1016/j.jbankfin.2009.08.023

McGregorBFA. (2012). McGregor BFA. Retrieved July 23, 2012, from www.mcgregorbfa.com

Mihai, I. O. (2012). Foreign owned companies and financial performance. A case study on companies listed on Bucharest Stock Exchange. *Economics and Applied Informatics, 1*, 13–20.

Moolman, C. E., Roos, E. L., Le Roux, J. C., & Du Toit, C. B. (2006). *Foreign direct investment: South Africa's elixir of life?* Department of Economics Working Paper Series. Pretoria, South Africa: University of Pretoria.

National Treasury. (2011). *A review framework for cross-border direct investment in South Africa*, Pretoria, South Africa. Retrieved from http://www.treasury.gov.za/documents/national%20budget/2011/A%20review%20framework%20for%20cross-border%20direct%20investment%20in%20South%20Africa.pdf

Ngowi, H. P. (2001). Can Africa increase its global share of foreign direct investment. *West Africa Review, 2*(2), p. 1-22

OECD. (1999). Benchmark definition of foreign direct investment. Paris: OECD, 1999

Ongore, V. O. (2011). The relationship between ownership structure and firm performance: An empirical analysis of listed companies in Kenya. *African Journal of Business Management 5*(6), 2120-2128.

Osborne, J. O., & Overbay, A. (2004). The power of outliers (and why researchers should always check for them). *Practical Assessment, Research & Evaluation, 9*(6). Retrieved from doi:http://PAREonline.net/getvn.asp?v=9&n=6

Ozgulbas, N., Ali, S. K., & Yilmaz, F. (2006). Identifying the effect of firm size on financial performance of SME's. *Business Review, Cambridge, 6*(1), 162–167.

Petkova, N. (2008). *Does foreign shareholding improve firm operating performance?* Paper presented at the Financial Managers Association Conference, Reno, Nevada.

Saunders, M., & Lewis, P. (2012). *Doing research in business and management: An essential guide to planning your project*. New York, NY: Prentice Hall.

Sharma, A., & Kumar, S. (2010). Economic Value Added (EVA) – Literature review and relevant issues. *International Journal of Economics and Finance, 2*(2), 200–220.

Sharma, A., & Kumar, S. (2012). *EVA versus conventional performance measures – Empirical evidence from India,* Paper presented at the ASBBS Annual Conference, Las Vegas, CO, February 2012.

Shim, E., & Lee, J. (2003). A canonical correlation analysis of CEO compensation and corporate performance in the service industry. *Review of Accounting & Finance, 2*(3), 72–90.

Singh, M., Davidson, I., & Wallace, N. (2003). Agency costs, ownership structure and corporate governance mechanisms. *Journal of Banking & Finance, 27*(5), 793-816. doi: 10.1016/s0378-4266(01)00260-6

Sridharan, P., Vijayakumar, N., & Chandra, S. R. K. (2009). Causal relationship between foreign direct investment and growth: Evidence from BRICS countries. *International Business Research, 2*(4), 198–203.

Stern, J. M., Stewart, G. B., & Chew, D. H. (1995). The EVA financial system. *Journal of Applied Corporate Finance, 8*(2), 474–488.

Tam, K., & Tan, M. G. (2007). Ownership, governance and firm performance in Malaysia. *Corporate Governance, 15*(2), 208–222.

UNCTAD. (2011). World Investment Report 2011: Non equity modes of international production and development. *United Nations Conference on Trade and Development,* 2011. New York, NY: United Nations Publications.

Uwalomwa, U., & Olamide, O. (2012). An empirical examination of the relationship between ownership structure and the performance of firms in Nigeria. *International Business Research, 5*(1), 208–215. doi: 10.5539/ibr.v5n1p208

Wang, C., Clegg, J., & Kafouros, M. (2009). Country of origin effects of foreign direct investment: An industry level analysis. *Management International Review, 49*(2), 179–198.

Wang, Z., Kueng, H., & Ng, T. (2006). A comparative study of tests for paired lifetime data. *Lifetime Data Analysis, 12*(4), 505–522. doi: 10.1007/s10985-006-9026-9

Weaver, S. C. (2001). Measuring Economic Value Added: A survey of the practices of EVA proponents. *Journal of Applied Finance, 11*(1), 50–60.

Zeitun, R., & Tian, G. G. (2007). Does ownership affect a firm's performance and default risk in Jordan? *Corporate Governance, 7*(1), 66-82. doi: 10.1108/14720700710727122

APPENDIX 1:
EVA® CORRECTIONS

Income Statement

<u>Profit After Tax</u>

Less: Total Profits of an Extraordinary Nature

Plus: Interest Paid

<u>Less: Tax on Total Interest Paid</u>

Net Operating Profit after Tax (NOPAT)

Balance Sheet

<u>Total Long-term Assets</u>

Plus: Goodwill

Plus: Intangible Assets

Plus: Current Assets

Less: Creditors

Less: Provision for Tax

<u>Less: Provision for Dividends</u>

Capital Employed (CE)

APPENDIX 2:

AGGREGATE FOREIGN OWNERSHIP

Appendix 2.1:
Data Analysis Results for the aggregate foreign ownership sample: ROA
Original Data Set

	Aggregate Foreign Ownership: ROA								
Code	Name	Grouping	2010	2009	2008	2007	2006	2005	2004
AMS	Anglo Platinum	Foreign	15.95	5.33	28.06	35.10	35.89	17.58	12.11
IMP	Impala Platinum Hlds	Local	12.10	16.80	36.49	22.30	29.80	29.63	22.66
PAM	Palabora Mining	Foreign	14.17	9.25	13.47	40.83	20.44	8.40	-74.98
ARI	African Rainbow Minerals Ltd	Local	11.51	18.30	28.40	14.21	8.73	15.10	14.86
AFX	African Oxygen	Foreign	8.71	10.07	13.68	17.97	31.17	65.83	11.73
AFE	AECI	Local	11.31	8.99	9.52	11.47	21.46	13.68	11.67
ILV	Illovo Sugar	Foreign	16.87	16.08	14.90	20.23			
TBS	Tiger Brands	Local	27.88	36.89	12.87	26.22			
ASA	ABSA Group Limited	Foreign	5.99	7.33	8.99	7.84	6.97	6.21	
FSR	Firstrand Limited	Local	4.09	5.23	5.33	5.98	5.07	5.61	
GRT	Growthpoint Prop Ltd	Foreign	9.07	7.97					
EMI	Emira Property Fund	Local	8.21	5.06					
NED	Nedbank Group	Foreign	5.68	7.26	9.00	7.57	5.81	5.75	5.58
RMH	RMB Holdings	Local	3.42	2.55	3.56	6.06	5.42	7.56	4.32
ANG	Anglogold Ashanti	Foreign	6.15	-1.14	-22.55	-3.21	2.83		
SOL	Sasol	Local	16.36	18.40	24.94	22.45	20.70		
BEL	Bell Equipment	Foreign	5.29	-8.67	15.89	17.68	18.42	2.12	1.67
BAW	Barloworld	Local	4.47	6.50	8.60	10.89	14.73	13.98	12.03
GFI	Gold Fields	Foreign	8.91	8.59	12.45	9.12	8.58	2.13	4.67
HAR	Harmony	Local	0.99	5.88	0.76	4.99	0.59	-13.47	-1.72
HDC	Hudaco Industries	Foreign	13.47	14.18					
IVT	Invicta Holdings	Local	15.17	14.91					
HLM	Hulamin	Foreign	2.97	3.56	6.03	3.32			
PET	Petmin Ltd.	Local	9.96	7.14	9.45	14.14			
KAP	KAP International Ltd	Foreign	8.11	1.30	7.22				
EQS	Eqstra Holdings	Local	7.59	8.90	4.54				
MSM	Massmart Holdings	Foreign	15.27	17.85	20.70	18.55	16.33	14.23	14.04
MPC	Mr Price Group	Local	24.53	27.97	28.07	27.27	29.76	21.15	18.04
MTX	Metorex Ltd	Foreign	15.48	-27.81	13.49	21.31	17.79	7.16	2.95
MRF	Merafe Resources	Local	11.14	-5.26	40.64	16.22	7.31	5.25	-0.02
MUR	Murray & Roberts	Foreign	9.59	13.12	13.09	11.18	7.65		
GRF	Group Five/South Africa	Local	7.13	9.18	8.73	6.48	5.35		
TON	Tongaat Hulett	Foreign	22.53		12.64	-14.17			
AVI	AVI	Local	20.35		19.18	21.11			
WEZ	Wesizwe Platinum	Foreign	11.93	-3.56					
SNU	Sentula Mining	Local	10.29	11.44					

Box-Whisker Plot for ROA Original Data

Box-Whisker Plot of Diff / ROA Total

ROA Data Removed

Pair	Foreign	Local	Diff
1	-22.55	24.94	-47.49
2	-14.17	21.11	-35.28
3	40.83	14.21	26.63
4	-74.98	14.86	-89.84
5	65.83	13.68	52.15

Box-Whisker Plot for ROA Final Data

Box-Whisker Plot of Diff / ROA Total Final
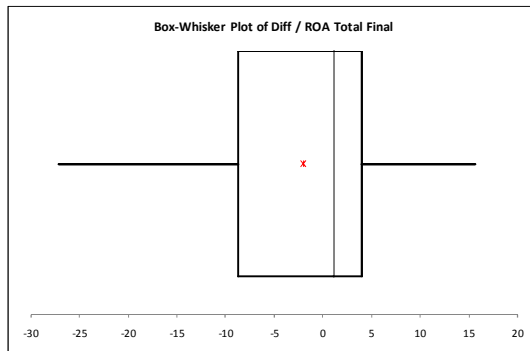
Normality Test: ROA

Chi-Square Test	Difference ROA Total
Mean	-2.016
Std Dev	8.943
Chi-Square Stat.	33.0369
p-Value	< 0.0001

98

Appendix 2.2:

ROE

Original Data Set

		Aggregate Foreign Ownership: ROE							
Code	**Name**	**Grouping**	**2010**	**2009**	**2008**	**2007**	**2006**	**2005**	**2004**
AMS	Anglo Platinum	Foreign	19.02	10.67	49.77	43.35	41.89	21.38	13.99
IMP	Impala Platinum Hlds	Local	10.77	14.70	40.53	21.94	31.37	37.12	27.73
PAM	Palabora Mining	Foreign	26.56	17.17	26.85	219.16	-188.79	18.11	-570.40
ARI	African Rainbow Minerals Ltd	Local	10.20	17.71	30.14	11.22	5.86	7.26	16.72
AFX	African Oxygen	Foreign	3.49	8.21	15.03	18.73	41.46	79.58	23.01
AFE	AECI	Local	13.98	10.69	9.99	11.46	25.48	14.04	9.67
ILV	Illovo Sugar	Foreign	11.98	26.65	25.27	29.15			
TBS	Tiger Brands	Local	26.36	35.67	14.00	38.28			
ASA	ABSA Group Limited	Foreign	14.46	11.48	22.73	25.54	25.44	22.15	
FSR	Firstrand Limited	Local	17.82	13.80	21.34	30.40	27.77	29.85	
GRT	Growthpoint Prop Ltd	Foreign	7.42	-4.81					
EMI	Emira Property Fund	Local	9.31	5.84					
NED	Nedbank Group	Foreign	10.65	12.17	18.36	19.95	18.05	17.06	5.38
RMH	RMB Holdings	Local	15.79	12.04	20.30	24.72	22.28	23.55	16.44
ANG	Anglogold Ashanti	Foreign	2.43	-12.81	-74.14	-26.85	-2.81		
SOL	Sasol	Local	16.83	16.29	29.18	27.64	19.81		
BEL	Bell Equipment	Foreign	1.82	-18.30	19.83	26.43	24.73	-1.17	-1.63
BAW	Barloworld	Local	-1.73	3.70	8.47	19.89	17.24	15.41	13.60
GFI	Gold Fields	Foreign	5.44	3.82	10.92	6.63	7.58	1.14	5.13
HAR	Harmony	Local	-0.66	9.91	-0.99	1.44	-2.26	-15.60	-2.52
HDC	Hudaco Industries	Foreign	18.23	21.15					
IVT	Invicta Holdings	Local	22.24	25.94					
HLM	Hulamin	Foreign	1.57	2.35	7.00	0.67			
PET	Petmin Ltd.	Local	8.68	10.58	37.83	16.60			
KAP	KAP International Ltd	Foreign	6.59	-3.01	9.58				
EQS	Eqstra Holdings	Local	-2.37	2.38	15.83				
MSM	Massmart Holdings	Foreign	31.09	36.67	48.86	47.29	41.80	37.54	30.39
MPC	Mr Price Group	Local	32.53	34.90	37.24	36.39	38.27	25.48	21.15
MTX	Metorex Ltd	Foreign	16.74	-62.81	16.07	28.73	19.06	4.25	-3.42
MRF	Merafe Resources	Local	10.82	-6.53	41.45	16.69	12.58	4.61	-22.34
MUR	Murray & Roberts	Foreign	17.48	32.34	33.82	19.31	15.48		
GRF	Group Five/South Africa	Local	10.75	21.69	20.86	14.57	21.07		
TON	Tongaat Hulett	Foreign	50.17		20.50	-56.34			
AVI	AVI	Local	16.04	18.97	19.27	18.33			
WEZ	Wesizwe Platinum	Foreign	14.19	-2.91					
SNU	Sentula Mining	Local	8.67	12.80					

Box-Whisker Plot for ROE Original Data

Box-Whisker Plot of Diff / Total Orig

ROE Data Removed

Pair	Foreign	Local	Diff
1	-74.14	29.18	-103.32
2	-26.85	27.64	-54.49
3	-62.81	-6.53	-56.28
4	-56.34	18.33	-74.67
5	219.16	11.22	207.94
6	-188.79	5.86	-194.65
7	-570.40	16.72	-587.12
8	79.58	14.04	65.55

Box-Whisker Plot for ROE Final Data

Box-Whisker Plot of Diff / Total Final
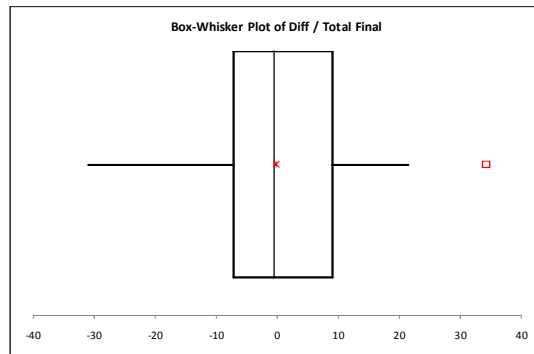
Normality Test: ROE

Chi-Square Test	Difference ROE Total
Mean	-0.14
Std Dev	11.87
Chi-Square Stat.	7.5802
p-Value	0.1809

Appendix 2.3:

%EVA

Original Data Set

		Aggregate Foreign Ownership: %EVA							
Code	**Name**	**Grouping**	**2010**	**2009**	**2008**	**2007**	**2006**	**2005**	**2004**
AMS	Anglo Platinum	Foreign	-0.26	-0.71	8.79	4.34	5.65	1.68	0.05
IMP	Impala Platinum Hlds	Local	-1.78	-0.05	5.28	1.07	2.13	1.31	1.08
PAM	Palabora Mining	Foreign	10.90	20.63	16.80	53.71	40.14	12.52	-28.24
ARI	African Rainbow Minerals Ltd	Local	-2.57	-2.90	7.60	0.28	-4.45	-0.68	-15.84
AFX	African Oxygen	Foreign	-1.01	-0.80	1.68	2.50	2.29	1.83	4.25
AFE	AECI	Local	1.67	-2.57	1.40	0.61	8.53	3.84	2.79
ILV	Illovo Sugar	Foreign	1.70	3.85	4.31	3.00			
TBS	Tiger Brands	Local	3.53	3.77	6.22	4.39			
ASA	ABSA Group Limited	Foreign	3.70	5.79	9.49	6.85	3.29	3.46	
FSR	Firstrand Limited	Local	-0.44	13.69	-2.30	2.65	-14.29	-6.46	
GRT	Growthpoint Prop Ltd	Foreign	0.01	-0.21					
EMI	Emira Property Fund	Local	-0.98	-0.94					
NED	Nedbank Group	Foreign	10.61	9.53	15.32	8.12	8.71	3.94	1.24
RMH	RMB Holdings	Local	-4.53	-2.39	-5.19	-4.08	-3.28	-2.95	-5.12
BEL	Bell Equipment	Foreign	-13.55	-58.21	9.83	3.83	5.80	-7.82	-18.24
BAW	Barloworld	Local	-7.57	-12.20	-7.93	3.36	1.51	2.76	0.06
HDC	Hudaco Industries	Foreign	3.33	4.63					
IVT	Invicta Holdings	Local	5.64	9.99					
HLM	Hulamin	Foreign	-26.73	-20.62	-13.54	-14.83			
PET	Petmin Ltd.	Local	2.17	4.20	1.40	-3.70			
KAP	KAP International Ltd	Foreign	-4.74	-10.28	1.97				
EQS	Eqstra Holdings	Local	-10.43	-12.24	-8.98				
MSM	Massmart Holdings	Foreign	3.59	5.85	5.84	6.31	4.48	3.95	5.22
MPC	Mr Price Group	Local	2.14	5.00	4.76	4.45	4.12	1.75	1.00
MTX	Metorex Ltd	Foreign	2.36	-7.35	-5.36	3.57	3.89	-0.54	-28.68
MRF	Merafe Resources	Local	-2.49	-15.86	39.98	3.29	3.05	-12.68	-8.25
MUR	Murray & Roberts	Foreign	-2.20	5.79	5.48	1.57	1.65		
GRF	Group Five/South Africa	Local	7.13	6.11	1.27	0.32	0.41		
TON	Tongaat Hulett	Foreign	-4.38		-6.17	-4.59			
AVI	AVI	Local	1.22		0.55	2.30			
WEZ	Wesizwe Platinum	Foreign	-5.65	-21.02					
SNU	Sentula Mining	Local	-36.64	-16.94					

Box-Whisker Plot for %EVA Original Data

Box-Whisker Plot of Diff / Total Orig

%EVA Data Removed

Pair	Foreign	Local	Diff
1	-58.21	-12.20	-46.02
2	-18.24	0.06	-18.30
3	-26.73	2.17	-28.91
4	-20.62	4.20	-24.82
5	-5.36	39.98	-45.33
6	-28.68	-8.25	-20.43
7	-5.65	-36.64	31.00
8	20.63	-2.90	23.53
9	53.71	0.28	53.43
10	40.14	-4.45	44.59
11	15.32	-5.19	20.51

Box-Whisker Plot for %EVA Final Data

Box-Whisker Plot of Diff / Total Final
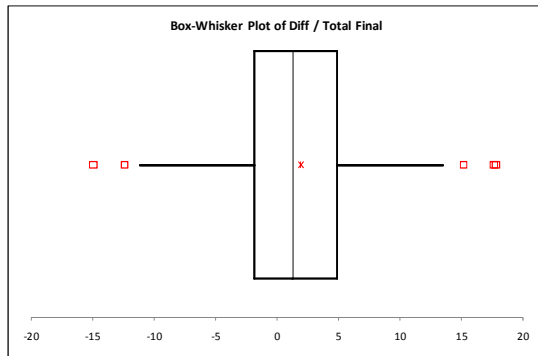
Normality Test: %EVA

Chi-Square Test	Difference %EVA Total
Mean	1.921
Std Dev	7.056
Chi-Square Stat.	9.3482
p-Value	0.0960

Appendix 2.4:

%MKVAL

Original Data Set

	Aggregate Foreign Ownership: %MKVAL								
Code	Name	Grouping	2010	2009	2008	2007	2006	2005	2004
AMS	Anglo Platinum	Foreign	-3.32	53.11	-48.24	27.04	89.49	120.77	-28.99
IMP	Impala Platinum Hlds	Local	14.76	50.36	-43.10	46.87	63.59	96.87	-17.41
PAM	Palabora Mining	Foreign	7.60	53.55	-29.30	69.74	122.90	-2.14	
ARI	African Rainbow Minerals Ltd	Local	20.91	56.55	-26.18	52.09	143.30	58.45	
AFX	African Oxygen	Foreign	-6.14	-9.28	-24.71	6.66	17.05	2.99	27.81
AFE	AECI	Local	33.06	21.57	-36.46	18.90	28.77	35.90	29.32
ILV	Illovo Sugar	Foreign	-13.51	85.47	0.72	12.88			
TBS	Tiger Brands	Local	13.16	31.38	-13.72	-1.75			
ASA	ABSA Group Limited	Foreign	8.95	26.43	-2.57	-10.19	23.86	35.31	
FSR	Firstrand Limited	Local	6.38	13.84	-18.43	-11.04	20.33	42.47	
GRT	Growthpoint Prop Ltd	Foreign	33.05	2.43					
EMI	Emira Property Fund	Local	25.06	7.98					
NED	Nedbank Group	Foreign	8.71	37.91	-28.19	3.21	35.56	44.77	79.67
RMH	RMB Holdings	Local	30.07	15.18	-13.18	-9.79	19.71	28.22	66.49
ANG	Anglogold Ashanti	Foreign	12.33	25.56	9.61	-11.21	8.97		
SOL	Sasol	Local	16.20	1.54	-11.77	30.99	4.96		
BEL	Bell Equipment	Foreign	5.42	-33.75	-72.66	103.85	173.68	53.23	
BAW	Barloworld	Local	50.94	7.92	-56.55	-33.67	30.93	6.74	
GFI	Gold Fields	Foreign	25.80	15.45	-7.17	-8.01	27.51	60.86	-27.23
HAR	Harmony	Local	10.65	-18.22	40.36	-36.64	32.68	103.31	-41.30
HDC	Hudaco Industries	Foreign	27.23	5.93					
IVT	Invicta Holdings	Local	74.00	8.65					
HLM	Hulamin	Foreign	-4.95	2.35	-35.92	124.97			
PET	Petmin Ltd.	Local	57.25	-4.69	-38.27	-48.29			
KAP	KAP International Ltd	Foreign	6.00	-66.04	116.53				
EQS	Eqstra Holdings	Local	61.75	-21.15	23.64				
MSM	Massmart Holdings	Foreign	66.06	5.72	18.62	2.56	35.91	14.04	48.49
MPC	Mr Price Group	Local	90.00	41.41	12.50	-8.38	37.93	54.04	61.77
MTX	Metorex Ltd	Foreign	47.04	233.96	-86.15	60.53	132.28	318.30	
MRF	Merafe Resources	Local	19.84	64.71	-63.68	226.46	28.41	45.52	
MUR	Murray & Roberts	Foreign	-13.58	-3.17	-52.94	154.36	104.59		
GRF	Group Five/South Africa	Local	-5.19	8.45	-34.71	43.03	118.78		
TON	Tongaat Hulett	Foreign	11.71	55.73	-28.65	-22.61			
AVI	AVI	Local	46.93	-0.67	4.94	11.71			
WEZ	Wesizwe Platinum	Foreign	55.02	5.50					
SNU	Sentula Mining	Local	1.40	25.16					

Box-Whisker Plot for %MKVAL Original Data

Box-Whisker Plot of Diff / Total Orig

%MKVAL Data Removed

Pair	Foreign	Local	Diff
1	103.85	-33.67	137.52
2	173.68	30.93	142.75
3	124.97	-48.29	173.26
4	116.53	23.64	92.89
5	233.96	64.71	169.25
6	60.53	226.46	-165.93
7	132.28	28.41	103.87
8	318.30	45.52	272.78
9	154.36	43.03	111.33

Box-Whisker Plot for %MKVAL Final Data

Box-Whisker Plot of Diff / Total Final

Normality Test: %MKVAL

Chi-Square Test	Difference MKVAL Total
Mean	-6.02
Std Dev	26.70
Chi-Square Stat.	4.98
p-Value	0.42

APPENDIX 3:

INSTITUTIONAL OWNERSHIP

Appendix 3.1:

Data Analysis Results for the Institutional Foreign Ownership sample: ROA Original Data Set

Institutional Foreign Ownership: ROA									
Code	Name	Grouping	2010	2009	2008	2007	2006	2005	2004
ANG	Anglogold Ashanti	Foreign	6.15	-1.14	-22.55	-3.21	2.83		
SOL	Sasol	Local	16.36	18.40	24.94	22.45	20.70		
BEL	Bell Equipment	Foreign	5.29	-8.67	15.89	17.68	18.42	2.12	1.67
BAW	Barloworld	Local	4.47	6.50	8.60	10.89	14.73	13.98	12.03
GFI	Gold Fields	Foreign	8.91	8.59	12.45	9.12	8.58	2.13	4.67
HAR	Harmony	Local	0.99	5.88	0.76	4.99	0.59	-13.47	-1.72
HDC	Hudaco Industries	Foreign	13.47	14.18					
IVT	Invicta Holdings	Local	15.17	14.91					
HLM	Hulamin	Foreign	2.97	3.56	6.03	3.32			
PET	Petmin Ltd.	Local	9.96	7.14	9.45	14.14			
KAP	KAP International Ltd	Foreign	8.11	1.30	7.22				
EQS	Eqstra Holdings	Local	7.59	8.90	4.54				
MSM	Massmart Holdings	Foreign	15.27	17.85	20.70	18.55	16.33	14.23	14.04
MPC	Mr Price Group	Local	24.53	27.97	28.07	27.27	29.76	21.15	18.04
MTX	Metorex Ltd	Foreign	15.48	-27.81	13.49	21.31	17.79	7.16	2.95
MRF	Merafe Resources	Local	11.14	-5.26	40.64	16.22	7.31	5.25	-0.02
MUR	Murray & Roberts	Foreign	9.59	13.12	13.09	11.18	7.65		
GRF	Group Five/South Africa	Local	7.13	9.18	8.73	6.48	5.35		
TON	Tongaat Hulett	Foreign	22.53		12.64	-14.17			
AVI	AVI	Local	20.35		19.18	21.11			
WEZ	Wesizwe Platinum	Foreign	11.93	-3.56					
SNU	Sentula Mining	Local	10.29	11.44					

Box-Whisker Plot for ROA Original Data

Box-Whisker Plot of Diff / Inst Diff Original Data Set

ROA Data Removed

Pair	Foreign	Local	Diff
1	-14.17	21.11	-35.28
2	-22.55	24.94	-47.49
3	13.49	40.64	-27.15

Box-Whisker Plot for ROA Final Data

Box-Whisker Plot of Diff / Inst Diff Final Data Set
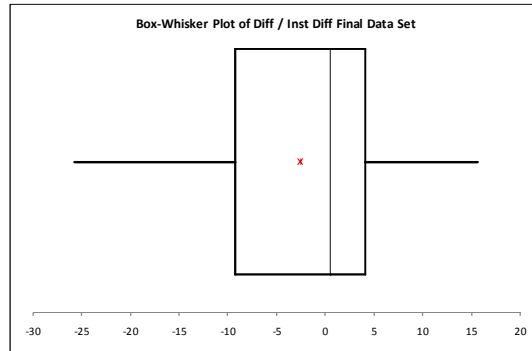
Normality Test: ROA

Chi-Square Test	Difference ROA Total
Mean	-2.548
Std Dev	9.298
Chi-Square Stat.	4.1399
p-Value	0.3874

Appendix 3.2:

Data Analysis Results for the Institutional Foreign Ownership Sample: ROE Original Data Set

Code	Name	Grouping	2010	2009	2008	2007	2006	2005	2004
					Institutional Foreign Ownership: ROE				
ANG	Anglogold Ashanti	Foreign	2.43	-12.81	-74.14	-26.85	-2.81		
SOL	Sasol	Local	16.83	16.29	29.18	27.64	19.81		
BEL	Bell Equipment	Foreign	1.82	-18.30	19.83	26.43	24.73	-1.17	-1.63
BAW	Barloworld	Local	-1.73	3.70	8.47	19.89	17.24	15.41	13.60
GFI	Gold Fields	Foreign	5.44	3.82	10.92	6.63	7.58	1.14	5.13
HAR	Harmony	Local	-0.66	9.91	-0.99	1.44	-2.26	-15.60	-2.52
HDC	Hudaco Industries	Foreign	18.23	21.15					
IVT	Invicta Holdings	Local	22.24	25.94					
HLM	Hulamin	Foreign	1.57	2.35	7.00	0.67			
PET	Petmin Ltd.	Local	8.68	10.58	37.83	16.60			
KAP	KAP International Ltd	Foreign	6.59	-3.01	9.58				
EQS	Eqstra Holdings	Local	-2.37	2.38	15.83				
MSM	Massmart Holdings	Foreign	31.09	36.67	48.86	47.29	41.80	37.54	30.39
MPC	Mr Price Group	Local	32.53	34.90	37.24	36.39	38.27	25.48	21.15
MTX	Metorex Ltd	Foreign	16.74	-62.81	16.07	28.73	19.06	4.25	-3.42
MRF	Merafe Resources	Local	10.82	-6.53	41.45	16.69	12.58	4.61	-22.34
MUR	Murray & Roberts	Foreign	17.48	32.34	33.82	19.31	15.48		
GRF	Group Five/South Africa	Local	10.75	21.69	20.86	14.57	21.07		
TON	Tongaat Hulett	Foreign	50.17		20.50	-56.34			
AVI	AVI	Local	16.04		19.27	18.33			
WEZ	Wesizwe Platinum	Foreign	14.19	-2.91					
SNU	Sentula Mining	Local	8.67	12.80					

Box-Whisker Plot for ROE Original Data

Box-Whisker Plot of Diff / Inst Orig

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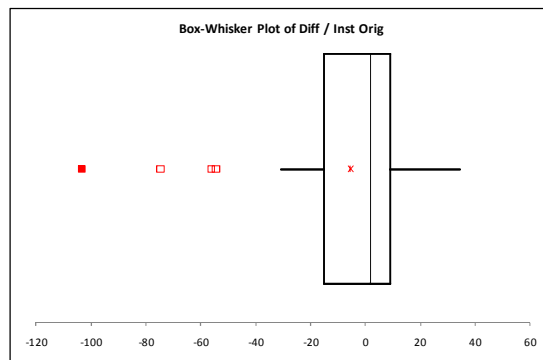
ROE Data Removed

Pair	Foreign	Local	Diff
1	-74.14	29.18	-103.32
2	-26.85	27.64	-54.49
3	-62.81	-6.53	-56.28
4	-56.34	18.33	-74.67
5	50.17	16.04	34.13

Box-Whisker Plot for ROE Final Data

Box-Whisker Plot of Diff / Inst Final
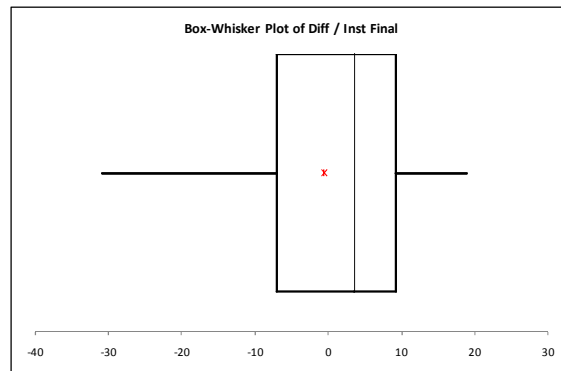
Normality Test: ROE

Chi-Square Test	Difference ROE Total
Mean	-0.58
Std Dev	12.65
Chi-Square Stat.	15.5184
p-Value	0.0037

Appendix 3.3:

Data Analysis Results for the Institutional Foreign Ownership Sample: %EVA Original Data Set

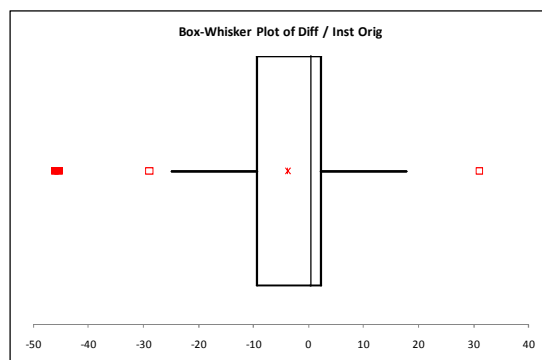| Institutional Foreign Ownership: %EVA									
Code	Name	Grouping	2010	2009	2008	2007	2006	2005	2004
BEL	Bell Equipment	Foreign	-13.55	-58.21	9.83	3.83	5.80	-7.82	-18.24
BAW	Barloworld	Local	-7.57	-12.20	-7.93	3.36	1.51	2.76	0.06
HDC	Hudaco Industries	Foreign	3.33	4.63					
IVT	Invicta Holdings	Local	5.64	9.99					
HLM	Hulamin	Foreign	-26.73	-20.62	-13.54	-14.83			
PET	Petmin Ltd.	Local	2.17	4.20	1.40	-3.70			
KAP	KAP International Ltd	Foreign	-4.74	-10.28	1.97				
EQS	Eqstra Holdings	Local	-10.43	-12.24	-8.98				
MSM	Massmart Holdings	Foreign	3.59	5.85	5.84	6.31	4.48	3.95	5.22
MPC	Mr Price Group	Local	2.14	5.00	4.76	4.45	4.12	1.75	1.00
MTX	Metorex Ltd	Foreign	2.36	-7.35	-5.36	3.57	3.89	-0.54	-28.68
MRF	Merafe Resources	Local	-2.49	-15.86	39.98	3.29	3.05	-12.68	-8.25
MUR	Murray & Roberts	Foreign	-2.20	5.79	5.48	1.57	1.65		
GRF	Group Five/South Africa	Local	7.13	6.11	1.27	0.32	0.41		
TON	Tongaat Hulett	Foreign	-4.38		-6.17	-4.59			
AVI	AVI	Local	1.22		0.55	2.30			
WEZ	Wesizwe Platinum	Foreign	-5.65	-21.02					
SNU	Sentula Mining	Local	-36.64	-16.94					

Box-Whisker Plot for %EVA Original Data

%EVA Data Removed

Pair	Foreign	Local	Diff
1	-58.21	-12.20	-46.02
2	-26.73	2.17	-28.91
3	-5.36	39.98	-45.33
4	-5.65	-36.64	31.00
5	-20.62	4.20	-24.82

Box-Whisker Plot for %EVA Final Data

Box-Whisker Plot of Diff / Inst Final
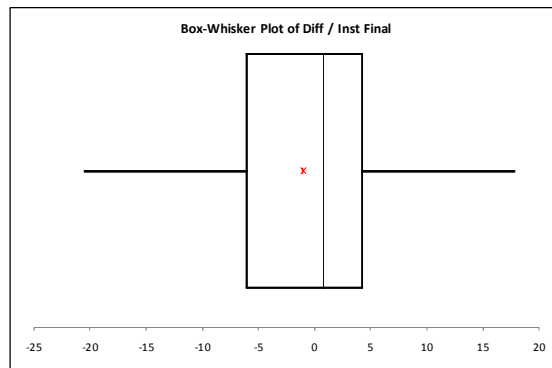
Normality Test: %EVA

Chi-Square Test	Difference %EVA Total
Mean	-1.015
Std Dev	8.149
Chi-Square Stat.	14.5685
p-Value	0.0057

Appendix 3.4:

Data Analysis Results for the institutional foreign ownership sample: %MKVAL Original Data Set

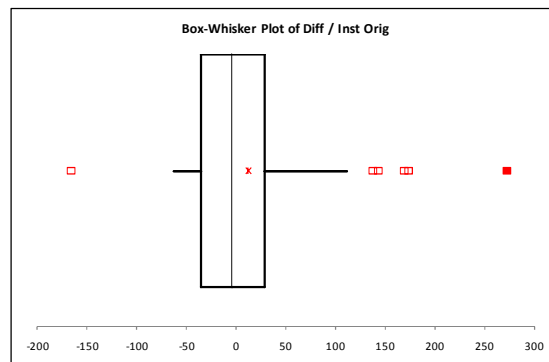|	Institutional Foreign Ownership: %MKVAL								
Code	**Name**	**Grouping**	**2010**	**2009**	**2008**	**2007**	**2006**	**2005**	**2004**
ANG	Anglogold Ashanti	Foreign	12.33	25.56	9.61	-11.21	8.97		
SOL	Sasol	Local	16.20	1.54	-11.77	30.99	4.96		
BEL	Bell Equipment	Foreign	5.42	-33.75	-72.66	103.85	173.68	53.23	
BAW	Barloworld	Local	50.94	7.92	-56.55	-33.67	30.93	6.74	
GFI	Gold Fields	Foreign	25.80	15.45	-7.17	-8.01	27.51	60.86	-27.23
HAR	Harmony	Local	10.65	-18.22	40.36	-36.64	32.68	103.31	-41.30
HDC	Hudaco Industries	Foreign	27.23	5.93					
IVT	Invicta Holdings	Local	74.00	8.65					
HLM	Hulamin	Foreign	-4.95	2.35	-35.92	124.97			
PET	Petmin Ltd.	Local	57.25	-4.69	-38.27	-48.29			
KAP	KAP International Ltd	Foreign	6.00	-66.04	116.53				
EQS	Eqstra Holdings	Local	61.75	-21.15	23.64				
MSM	Massmart Holdings	Foreign	66.06	5.72	18.62	2.56	35.91	14.04	48.49
MPC	Mr Price Group	Local	90.00	41.41	12.50	-8.38	37.93	54.04	61.77
MTX	Metorex Ltd	Foreign	47.04	233.96	-86.15	60.53	132.28	318.30	
MRF	Merafe Resources	Local	19.84	64.71	-63.68	226.46	28.41	45.52	
MUR	Murray & Roberts	Foreign	-13.58	-3.17	-52.94	154.36	104.59		
GRF	Group Five/South Africa	Local	-5.19	8.45	-34.71	43.03	118.78		
TON	Tongaat Hulett	Foreign	11.71	55.73	-28.65	-22.61			
AVI	AVI	Local	46.93	-0.67	4.94	11.71			
WEZ	Wesizwe Platinum	Foreign	55.02	5.50					
SNU	Sentula Mining	Local	1.40	25.16					

Box-Whisker Plot for %MKVAL Original Data

Box-Whisker Plot of Diff / Inst Orig

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%MKVAL Data Removed

Pair	Foreign	Local	Diff
1	103.85	-33.67	137.52
2	173.68	30.93	142.75
3	124.97	-48.29	173.26
4	116.53	23.64	92.89
5	233.96	64.71	169.25
6	60.53	226.46	-165.93
7	132.28	28.41	103.87
8	318.30	45.52	272.78
9	154.36	43.03	111.33

Box-Whisker Plot for %MKVAL Final Data

Box-Whisker Plot of Diff / Inst Final

Normality Test: %MKVAL

Chi-Square Test	Difference
	MKVAL Total
Mean	-9.96
Std Dev	30.59
Chi-Square Stat.	6.12
p-Value	0.19

APPENDIX 4:

CORPORATE OWNERSHIP

Appendix 4.1:

Data Analysis Results for the Corporate Foreign Ownership Sample: ROA Original Data Set

| Code	Name	Grouping	2010	2009	2008	2007	2006	2005	2004
Corporate Foreign Ownership: ROA
AMS	Anglo Platinum	Foreign	15.95	5.33	28.06	35.10	35.89	17.58	12.11
IMP	Impala Platinum Hlds	Local	12.10	16.80	36.49	22.30	29.80	29.63	22.66
PAM	Palabora Mining	Foreign	14.17	9.25	13.47	40.83	20.44	8.40	-74.98
ARI	African Rainbow Minerals Ltd	Local	11.51	18.30	28.40	14.21	8.73	15.10	14.86
AFX	African Oxygen	Foreign	8.71	10.07	13.68	17.97	31.17	65.83	11.73
AFE	AECI	Local	11.31	8.99	9.52	11.47	21.46	13.68	11.67
ILV	Illovo Sugar	Foreign	16.87	16.08	14.90	20.23			
TBS	Tiger Brands	Local	27.88	36.89	12.87	26.22			
ASA	ABSA Group Limited	Foreign	5.99	7.33	8.99	7.84	6.97	6.21	
FSR	Firstrand Limited	Local	4.09	5.23	5.33	5.98	5.07	5.61	
GRT	Growthpoint Prop Ltd	Foreign	9.07	7.97					
EMI	Emira Property Fund	Local	8.21	5.06					
NED	Nedbank Group	Foreign	5.68	7.26	9.00	7.57	5.81	5.75	5.58
RMH	RMB Holdings	Local	3.42	2.55	3.56	6.06	5.42	7.56	4.32

Box-Whisker Plot for ROA Original Data

Box-Whisker Plot of Diff / Corp Diff
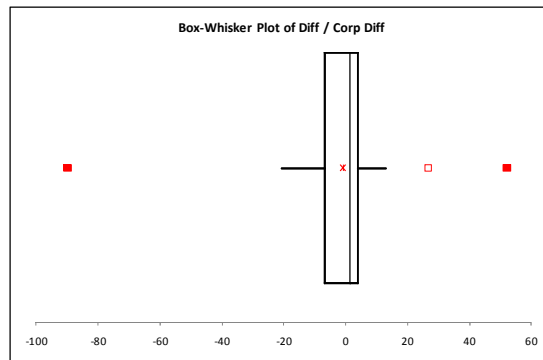
ROA Data Removed

Pair	Foreign	Local	Diff
1	40.83	14.21	26.63
2	-74.98	14.86	-89.84
3	65.83	13.68	52.15

Box-Whisker Plot for ROA Final Data
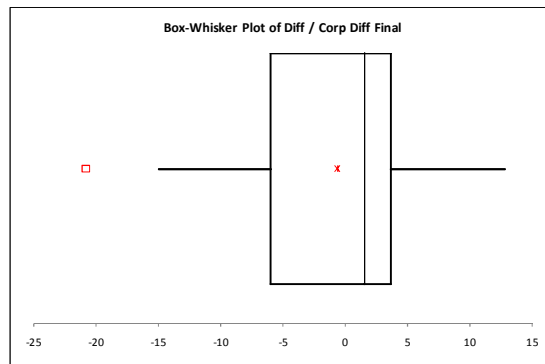
Normality Test: ROA

Chi-Square Test	Difference ROA Total
Mean	-0.632
Std Dev	7.476
Chi-Square Stat.	12.1315
p-Value	0.0164

Appendix 4.2:

Data Analysis Results for the Corporate Foreign Ownership Sample: ROE Original Data Set

Corporate Foreign Ownership: ROE									
Code	Name	Grouping	2010	2009	2008	2007	2006	2005	2004
AMS	Anglo Platinum	Foreign	19.02	10.67	49.77	43.35	41.89	21.38	13.99
IMP	Impala Platinum Hlds	Local	10.77	14.70	40.53	21.94	31.37	37.12	27.73
PAM	Palabora Mining	Foreign	26.56	17.17	26.85	219.16	-188.79	18.11	-570.40
ARI	African Rainbow Minerals Ltd	Local	10.20	17.71	30.14	11.22	5.86	7.26	16.72
AFX	African Oxygen	Foreign	3.49	8.21	15.03	18.73	41.46	79.58	23.01
AFE	AECI	Local	13.98	10.69	9.99	11.46	25.48	14.04	9.67
ILV	Illovo Sugar	Foreign	11.98	26.65	25.27	29.15			
TBS	Tiger Brands	Local	26.36	35.67	14.00	38.28			
ASA	ABSA Group Limited	Foreign	14.46	11.48	22.73	25.54	25.44	22.15	
FSR	Firstrand Limited	Local	17.82	13.80	21.34	30.40	27.77	29.85	
GRT	Growthpoint Prop Ltd	Foreign	7.42	-4.81					
EMI	Emira Property Fund	Local	9.31	5.84					
NED	Nedbank Group	Foreign	10.65	12.17	18.36	19.95	18.05	17.06	5.38
RMH	RMB Holdings	Local	15.79	12.04	20.30	24.72	22.28	23.55	16.44

Box-Whisker Plot for ROE Original Data

Box-Whisker Plot of Diff / Corp Orig
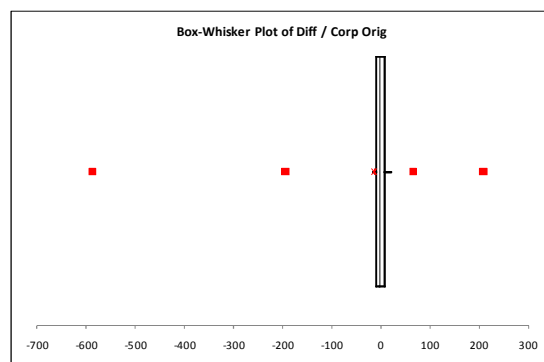
ROE Data Removed

Pair	Foreign	Local	Diff
1	219.16	11.22	207.94
2	-188.79	5.86	-194.65
3	-570.40	16.72	-587.12
4	79.58	14.04	65.55

Box-Whisker Plot for ROE Final Data

Box-Whisker Plot of Diff / Corp Final
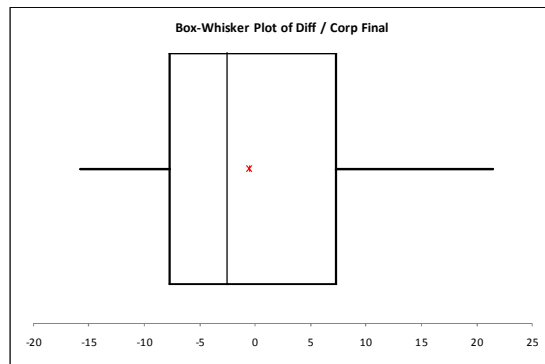
Normality Test: ROE

Chi-Square Test	Difference
	ROE Total
Mean	-0.515
Std Dev	9.484
Chi-Square Stat.	7.4033
p-Value	0.1161

Appendix 4.3:

Data Analysis Results for the Corporate Foreign Ownership Sample: %EVA Original Data Set

Corporate Foreign Ownership: %EVA									
Code	Name	Grouping	2010	2009	2008	2007	2006	2005	2004
AMS	Anglo Platinum	Foreign	-0.26	-0.71	8.79	4.34	5.65	1.68	0.05
IMP	Impala Platinum Hlds	Local	-1.78	-0.05	5.28	1.07	2.13	1.31	1.08
PAM	Palabora Mining	Foreign	10.90	20.63	16.80	53.71	40.14	12.52	-28.24
ARI	African Rainbow Minerals Ltd	Local	-2.57	-2.90	7.60	0.28	-4.45	-0.68	-15.84
AFX	African Oxygen	Foreign	-1.01	-0.80	1.68	2.50	2.29	1.83	4.25
AFE	AECI	Local	1.67	-2.57	1.40	0.61	8.53	3.84	2.79
ILV	Illovo Sugar	Foreign	1.70	3.85	4.31	3.00			
TBS	Tiger Brands	Local	3.53	3.77	6.22	4.39			
ASA	ABSA Group Limited	Foreign	3.70	5.79	9.49	6.85	3.29	3.46	
FSR	Firstrand Limited	Local	-0.44	13.69	-2.30	2.65	-14.29	-6.46	
GRT	Growthpoint Prop Ltd	Foreign	0.01	-0.21					
EMI	Emira Property Fund	Local	-0.98	-0.94					
NED	Nedbank Group	Foreign	10.61	9.53	15.32	8.12	8.71	3.94	1.24
RMH	RMB Holdings	Local	-4.53	-2.39	-5.19	-4.08	-3.28	-2.95	-5.12

Box-Whisker Plot for %EVA Original Data

Box-Whisker Plot of Diff / Corp Orig
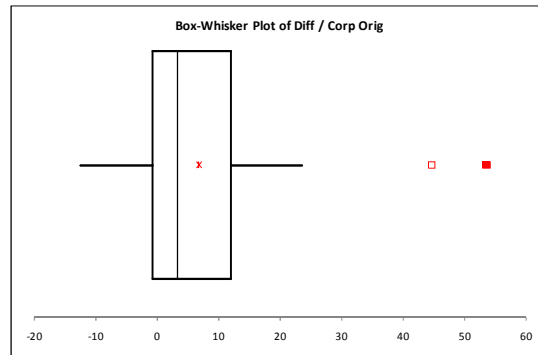
%EVA Data Removed

Pair	Foreign	Local	Diff
1	53.71	0.28	53.43
2	40.14	-4.45	44.59

Box-Whisker Plot for %EVA Final Data

Box-Whisker Plot of Diff / Corp Final
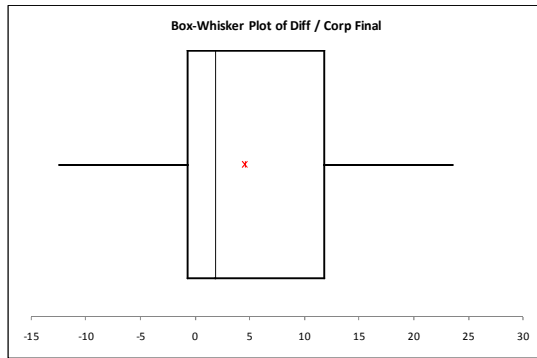
Normality Test: %EVA

Chi-Square Test	Difference %EVA Total
Mean	4.563
Std Dev	7.852
Chi-Square Stat.	9.1419
p-Value	0.0576

Appendix 4.4:

Data Analysis Results for the Corporate Foreign Ownership Sample: %MKVAL

Original Data Set

Corporate Foreign Ownership: %MKVAL									
Code	Name	Grouping	2010	2009	2008	2007	2006	2005	2004
AMS	Anglo Platinum	Foreign	-3.32	53.11	-48.24	27.04	89.49	120.77	-28.99
IMP	Impala Platinum Hlds	Local	14.76	50.36	-43.10	46.87	63.59	96.87	-17.41
PAM	Palabora Mining	Foreign	7.60	53.55	-29.30	69.74	122.90	-2.14	
ARI	African Rainbow Minerals Ltd	Local	20.91	56.55	-26.18	52.09	143.30	58.45	
AFX	African Oxygen	Foreign	-6.14	-9.28	-24.71	6.66	17.05	2.99	27.81
AFE	AECI	Local	33.06	21.57	-36.46	18.90	28.77	35.90	29.32
ILV	Illovo Sugar	Foreign	-13.51	85.47	0.72	12.88			
TBS	Tiger Brands	Local	13.16	31.38	-13.72	-1.75			
ASA	ABSA Group Limited	Foreign	8.95	26.43	-2.57	-10.19	23.86	35.31	
FSR	Firstrand Limited	Local	6.38	13.84	-18.43	-11.04	20.33	42.47	
GRT	Growthpoint Prop Ltd	Foreign	33.05	2.43					
EMI	Emira Property Fund	Local	25.06	7.98					
NED	Nedbank Group	Foreign	8.71	37.91	-28.19	3.21	35.56	44.77	79.67
RMH	RMB Holdings	Local	30.07	15.18	-13.18	-9.79	19.71	28.22	66.49

Box-Whisker Plot for %MKVAL Original Data

Box-Whisker Plot of Diff / Corp Orig
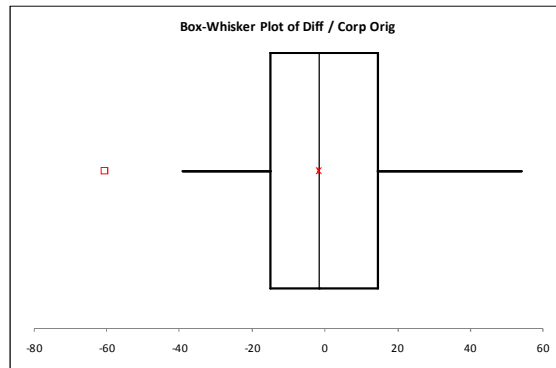
%MKVAL Data Removed

Pair	Foreign	Local	Diff
1	-2.14	58.45	-60.59

Box-Whisker Plot for %MKVAL Final Data
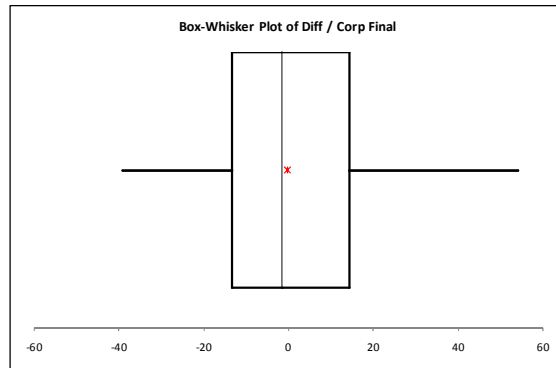
Normality Test: %MKVAL

Chi-Square Test	Difference MKVAL Total
Mean	-0.23
Std Dev	19.28
Chi-Square Stat.	4.9550
p-Value	0.2919

APPENDIX 5:

INVESTOR RETURN

Appendix 5.1:

Data Analysis Results for the Institutional Foreign Ownership Share Portfolio

Normality Test Results

Chi-Square Test	Difference MKVAL Total
Mean	-0.890
Std Dev	4.454
Chi-Square Stat.	7.9872
p-Value	0.0920

Appendix 5.2:

Data Analysis Results for the Corporate Foreign Ownership Share Portfolio

Normality Test Results

Chi-Square Test	Difference MKVAL Total
Mean	-0.370
Std Dev	2.859
Chi-Square Stat.	3.2627
p-Value	0.5149