

THE LEVEL AND STABILITY OF INSTITUTIONAL OWNERSHIP AND ITS INFLUENCE ON COMPANY PERFORMANCE IN SOUTH AFRICA

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Abstract

Institutional ownership in companies is an important tool in monitoring and controlling the business interests of the shareholders. This study investigated whether the performance of the Top 100 companies listed on the Johannesburg Securities Exchange is influenced by the level, and stability of institutional ownership. A regression analysis was used to test the relationship between Tobin's Q and return on assets and the international, domestic and total institutional ownership and the stability of institutional shareholding. It was found that institutional shareholding is an important corporate governance factor to improve firm value. International institutional shareholding has an effect on future firm value, whilst domestic institutional, total institutional shareholding and the stability of total institutional shareholding has an effect on historical firm value.

Keywords: Company Performance, Institutional Ownership, Foreign Institutional Shareholding, Domestic Institutional Shareholding, Ownership Stability

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1 Introduction

High-profile accounting scandals and bankruptcies of the past two decades have highlighted the risks involved in the ownership of companies (Bhasin, 2013). The owners or shareholders of a company rely on the directors of that company to control and respect their interests. This is referred to as the agency theory. The ownership structure of a company is therefore an important tool in the corporate governance system (Perrini *et al.*, 2008) which can most often resolve the agency theory (Jensen and Meckling, 1976; Shleifer and Vishny, 1986), thereby improving company performance (Alipour, 2013: 1138). The abilities of institutional ownership collectively exceed and are substantially stronger than the joint efforts of smaller and diverse investors (Chen *et al.*, 2008: 109).

In many countries institutional ownership has evolved over time and represents a significant part of the shareholdings of listed companies. In the United Kingdom (UK), the institutional ownership increased from 27.7 % in 1963 to 59.4 % in 2012, based on the latest available statistics (UK Office of National Statistics, 2013).

In the US, corporate ownership became dispersed as early as 1930, resulting in the agency theory. Individual share ownership continued to be the dominant form of share-ownership up until the 1980s. These individuals were rarely actively engaged in corporate governance and corporate boards were mainly made up of insiders. During the 1980s, macro-

economic growth slowed down and the US economy was under pressure. Institutional ownership came to the fore as shareholders of companies with hostile takeovers and pension funds investing in companies. These institutional investors began to participate in the affairs of the companies in which they had shares and became active players in the corporate governance of companies (Jackson, 2010).

In the UK, in the 1940s and 1950s important changes in the capital structure of companies occurred. Following a number of financial scandals, minority interest protection was strengthened in the 1940s. There was also a sharp increase in institutional ownership. By 1960 about one third of listed companies had a majority of institutional ownership (Mork, 2007: 584).

Unlike companies in the US and UK, shares in the typical Asian company are mostly held by family members. Companies are often affiliated by business groups controlled by the same family. In addition to the family ownership, government controls a significant number of listed companies in several countries including Singapore and China. Individual or institutional shareholders have a minority interest in corporate shares in developing China (Claeseens and Fan, 2002).

Due to the political environment in South Africa between 1961 and 1994, the country was totally isolated from the global economy. Political reforms led to the collapse of apartheid in 1994 which in turn led to the lifting of sanctions imposed by the

international community on South Africa (Malherbe and Segal, 2001). Since 1994, it appears that the institutional share ownership of South African corporations has evolved through two phases. An early phase of institutional reform occurred from 1994 to 2001 because the government sought to encourage corporate participation in the process of incorporating the socially disfavoured into the mainstream. Arya and Zhang (2009) argue that developments such as the Mineral and Resources Development Act of 2002, followed by the Black Economic Empowerment Act of 2003, signalled another phase of institutional reform.

2 Problem statement

Several past studies investigated how the proportion of institutional shareholders affected managers and company performance. This explanation is not complete without looking at other factors, namely stability of institutional shareholdings, which encourages long-term performance and corporate governance (Bushee, 1998; Bushee and Noe, 2000; Chen *et al.*, 2007; Elyasiani and Jia, 2010; Elyasiani *et al.*, 2010). The findings of these studies show that the higher and more stable the institutional holdings, the stronger the incentives to monitor directors.

Institutional investors can provide expertise, experience, and resources for stock market analysis, which are more pronounced with foreign institutional investors. Barber, Lee, Liu and Odean (2009) and Huang and Shiu (2009) found evidence that stocks with higher foreign institutional holdings provide better returns than those with lower foreign institutional holdings. These authors also indicate differences between the performances of companies with foreign institutional investors and those with domestic institutional investors.

In this article, the level of international institutional shareholding, domestic institutional shareholding total institutional shareholding, and the variance of institutional shareholdings as the proxy variable for ownership stability were investigated. In addition, return on assets (ROA) and Tobin's Q were used as performance variables for the company. This study can provide valuable information for regulators of emerging markets when determining policies regarding institutional ownership of companies, especially foreign institutional ownership, as foreign institutions usually play a controversial role in these markets.

Against the background sketched above, research was undertaken to determine whether company performance is influenced by the level and stability of its institutional shareholders.

3 Structure of the remainder of the article

The remainder of this article is structured as follows: first, the limitations of the study are provided. These

are followed by a review of prior research and the development of hypotheses. Next, a discussion of the methodology follows; it includes the sample selection and a presentation of the research model. The empirical results are then discussed, followed by the conclusion and suggestions for future research.

4 Research limitations

The study had specific limitations. The assessment is limited to the annual reports of 71 of the Top 100 companies listed on the Johannesburg Stock Exchange (JSE) for the 2009 to 2013 reporting period as sourced from the INET McGregor BFA. Specific market-based and accounting-based performance measures which were sourced from the financial ratio and financial model function of INET McGregor BFA were used. The measures were selected based on prior studies (e.g. Huang and Shiu, 2009; Bhattacharya and Graham, 2009; Alipour, 2013). The usage of other performance measures could possibly have led to different results.

5 Theories, prior research and hypothesis development

A wide range of research on institutional shareholding was used during this study to identify how institutional shareholders influence company performance, as reported below.

The agency theory forms the theoretical perspective behind the hypotheses for the study on which this article is based. Jensen and Meckling (1973) and Berle and Means (1932) explained agency theory as the separation of corporate ownership and control which has the potential to lead to agency problems in the form of self-interested actions by directors and other managers within a company. It is suggested that as a result of their independence, institutional shareholders can assist in monitoring and controlling management due to their large shareholding, whereby the agency problem is reduced (Choi *et al.*, 2012: 269).

Pound (1988) discusses further theories describing the relationship between institutional shareholders and firm value. The efficient monitoring theory states that the larger the institutional shareholding, the more efficient the monitoring of that shareholder, which leads to a positive correlation between institutional ownership and firm value. In contrast, the strategic alignment and conflict-of-interest theories state that large institutional shareholders maintain strategic relationships with directors, which influences their voting behaviour. These two theories predict a negative correlation between firm value and institutional shareholding. Navissi and Naiker (2006) conducted a study which showed it is possible that institutional investors, similar to directors, could decrease company value once their shareholdings exceed a certain level. This is

referred to as the convergence-of-interest theory. At higher levels of share ownership, institutional shareholders may engage in decisions that could be harmful to the company; this is the entrenchment theory. The mixture of the two latter theories leads to a further non-linear relation between the institutional shareholders and the value of the company.

In the twenty-first century, institutional ownership in companies has emerged as an important tool in monitoring and controlling business interests of the shareholders of a company (Chen *et al.*, 2008: 109). Earlier research supports the view that company value is dependent on the shares allocated to directors and outsiders (Berle and Means, 1932; Jensen and Meckling, 1976). Shleifer and Vishny (1986) explain that large institutional investors will have a positive effect on the market value of the company because they act as an effective monitoring tool. Barclay and

Holderness (1990) proved that there are positive excess returns in a company when it became known that institutional investors would acquire large share positions. Yuan, Xiao and Zou (2008) used the Chinese market to investigate the relationship between mutual funds and company performance and provided evidence that long-term investors have stronger monitoring capabilities and positive effects on company value. Institutional shareholders, unlike individual shareholders, are equipped for efficient monitoring of the directors and reducing the costs; thus there is a positive relationship between institutional ownership and performance. This finding is supported by Shleifer and Vishny (1997), and Filatotchev, Lien and Piesse (2005), who found evidence of a significant positive relationship between institutional ownership and performance.

Table 1. Findings of studies relevant to international institutional shareholding and company performance

<i>Authors</i>	<i>Country and number of companies tested</i>	<i>Findings</i>	<i>Link with the current study</i>
Douma, George and Kabir (2002)	India (1 005 companies listed on the Capitaline 2000 database)	There is a significant positive relationship between foreign institutional shareholders and company performance when measured by the Tobin's Q ratio.	Supports hypothesis 1.
Wei, Xie and Zhang (2005)	China (5 284 companies listed on the Shanghai or Shenzhen Stock Exchange)	Foreign ownership is significantly positively related to Tobin's Q.	Supports hypothesis 1.
Filatotchev <i>et al.</i> (2005)	Taiwan (228 companies listed on the Taiwanese Stock Exchange)	Foreign institutional shareholders are associated with improved company performance.	Supports hypothesis 1.
Gürbüz, Aybars and Kutlu (2010)	Turkish (164 companies on the Istanbul Stock Exchange)	Foreign institutional investors improve the performance of companies.	Supports hypothesis 1.
Mizuno (2010)	Japan (189 companies listed on the Tokyo Stock Exchange)	International institutional shareholders have a positive influence on corporate governance, which in turn influences company performance.	Supports hypothesis 1.
Aggarwal, Erel, Ferreira and Matos (2011)	United States of America (Various companies – classified as US and non-US)	International institutional ownership positively influences corporate governance mechanisms.	Indirectly supports hypothesis 1.
Choi, Park and Hong (2012)	Korea (301 companies listed on the Korean Stock Exchange)	International institutional shareholders are positively associated with technological innovation performance and played a positive role in improving corporate governance in the company.	Supports hypothesis 1.
Mi Choi, Sul and Kee Min (2012)	Korea (896 companies listed on the Korea Stock Exchange)	International share ownership is positively correlated with company value.	Supports hypothesis 1.

Source: compiled by authors

Some studies investigating the influence of institutional ownership on firm performance used return on assets and return on equity as the accounting profit rates to test for firm performance (Filatotchev *et al.*, 2005; Cornett *et al.*, 2007; Chen *et al.*, 2007).

Other studies used Tobin's Q to measure firm performance (Wei *et al.*, 2005; Mi Choi *et al.*, 2012). Most studies employed both measures (Douma *et al.*, 2002; Chen *et al.*, 2008; Yuan *et al.*, 2008; Huang and Shiu, 2009; Bhattacharya and Graham, 2009; Alipour,

2013). Chen, Blenman and Chen (2008) reports that Tobin's Q is a common measure of efficiency and future opportunities of a company and thus forward looking, while accounting profit rates, such as return on assets and return on equity are backward looking. The accounting profit rates only partially incorporates estimates of future events such as valuations of goodwill and depreciation. Tobin's Q is however based on investor's psychology surrounding world events, which include business strategies (Demsetz and Villalonga, 2001). In the sample tested in this research, both measures were utilised, namely return on assets as the accounting profit rate and Tobin's Q as a forward-looking rate. A correlation is expected between Tobin's Q and return on assets. This can be seen from Table 7 and a 65% correlation rate is reported.

5.1 International institutional ownership and company performance

Ferreira and Matos (2008) reported that foreign and independent institutions, with potentially fewer

business ties to companies, are involved in monitoring corporations worldwide (Bhattacharya and Graham, 2009: 370–371). It has been noted that foreign investors will invest abroad when the investment relates to their main business and if found it will provide a competitive advantage. Especially in the emerging economies, an increase in international shareholders is associated with positive and successful business growth (Choi *et al.*, 2012: 273).

International shareholders lead to efficient management of companies by improving corporate governance due to their relative independence from other domestic shareholders (Mi Choi *et al.*, 2012: 208). Further, a company's reputation in the market is improved by the presence of international shareholders and encourages additional investors (Mi Choi *et al.*, 2012: 212).

A summary of the main findings of studies relevant to international institutional shareholding and company performance is presented in Table 1. How these link with the current study is also shown.

Table 2. Findings of studies relevant to domestic institutional shareholding and company performance

<i>Authors</i>	<i>Country and number of companies tested</i>	<i>Findings</i>	<i>Link with the current study</i>
Douma <i>et al.</i> (2002)	India (1 005 companies listed on the Capitaline 2000 database)	A positive relationship exists between domestic institutional shareholders and company performance although not of the same magnitude as foreign companies.	Supports hypothesis 2.
Filatotchev <i>et al.</i> (2005)	Taiwan (228 companies listed on the Taiwan Stock Exchange)	The effects of domestic banks as institutional shareholders were positive yet not as significant when compared to foreign banks.	Indirectly supports hypothesis 2.
Huang and Shiu (2009)	Taiwan (523 companies from the Taiwan Economic Journal database)	Company shares with high foreign ownership outperform stocks with low foreign ownership. This provides evidence that foreign institutional investors have an advantage over domestic investors.	Indirectly supports hypothesis 2.
Gürbüz <i>et al.</i> (2010)	Turkey (164 companies on the Istanbul Stock Exchange)	Domestic institutional investors improve the performance of companies.	Supports hypothesis 2.
Aggarwal <i>et al.</i> (2011)	United States of America (Various companies – classified as US and non-US)	The correlation between corporate governance and institutional shareholders is driven by the nationality of the institutional investor. The correlation between domestic institutional ownership is positive and significant.	Indirectly supports hypothesis 2.
Hsu and Wang (2014)	Taiwan (647 companies listed on the Taiwan Stock Exchange)	This study showed differences between the performances of companies with foreign institutional investors and those with domestic institutional investors.	Indirectly supports hypothesis 2.
Tsai and Tung (2014)	Taiwan (137 companies listed on the Taiwan Stock Exchange)	This study reported a positive effect on companies by forcing directors to oversee a company in a more efficient manner when there are more domestic institutional shareholders.	Supports hypothesis 2.

Source: compiled by authors

In summary and based on the studies indicated above, it can be accepted that company performance

increased with an increase in international institutional shareholding.

It is therefore expected that:

H1: There is a positive correlation between international institutional ownership and company performance

5.2 Domestic institutional ownership and company performance

Hsu and Wang (2014) reported distinct differences between the performances of companies with foreign institutional shareholders and those with domestic institutional shareholders, both showing a positive and significant correlation. While international shareholders are an integral component in company shareholdings in emerging countries, it does not make up the largest portion thereof (Gürbüz *et al.*, 2010: 3), hence it is necessary to look at domestic shareholding.

A summary of the main findings of studies relevant to domestic institutional shareholding and company performance is presented in Table 2.

In summary and based on the studies above, it can be accepted that company performance increased with an increase in domestic institutional shareholding.

It is therefore expected that:

H2: There is a positive correlation between domestic institutional ownership and company performance.

5.3 Total institutional ownership and company performance

Navissi and Naiker (2006) found that shareholding by active institutional investors of up to 30% positively influences corporate value, and Cornett, Marcus,

Saunders and Tehranian (2007) found that the percentages of institutional investor involvement in a company, as well as their numbers, are associated with better operating cash flow returns. However, the findings only hold when the investors have no business relation with the company (Jafarnejad *et al.*, 2015: 208).

Institutional shareholders are also becoming more involved in corporate governance principles, especially in under-performing companies (Cornett *et al.*, 2007: 1773). Gillan and Starks (2000) found that corporate governance initiatives endorsed by institutional investors were favourably received in contrast to those of independent individuals. Hartzell and Starks (2003) found that institutional ownership has a negative correlation with the level of executive remuneration and is positively correlated with pay-for-performance sensitivity. In conclusion, it was found that large institutional ownership in a company deters directors from pursuing opportunistic earnings (Chung *et al.*, 2002) and thus it is better to follow their lead (Jafarnejad *et al.*, 2015:207; Jensen and Meckling, 1976; Shleifer and Vishny, 1986).

A summary of main findings of studies relevant to total institutional ownership and company performance is presented in Table 3.

Based on studies listed in Table 3, there is evidence of a positive correlation between total institutional shareholders and company performance.

It is therefore expected that:

H3: There is a positive correlation between total institutional shareholding and company performance.

Table 3. Findings of studies relevant to total institutional ownership and company performance

<i>Authors</i>	<i>Country and number of companies tested</i>	<i>Findings</i>	<i>Link with the current study</i>
Filatotchev <i>et al.</i> (2005)	Taiwan (228 companies listed on the Taiwan Stock Exchange)	Institutional shareholders are associated with improved company performance.	Supports hypothesis 3.
Navissi and Naiker (2006)	New Zealand (123 companies listed on the New Zealand Stock Exchange)	Shareholding by active institutional investors improves the value of the company.	Supports hypothesis 3.
Cornett <i>et al.</i> (2007)	United States of America (676 companies listed on Standard and Poor)	Higher institutional shareholding is associated with better operating performance and confirmed that institutional ownership promotes monitoring of corporate directors.	Supports hypothesis 3.
Chen, Harford and Li (2007)	United States of America (2 150 merger deals on the Mergers and Acquisitions database of Securities Data Company)	Independent, long-term institutions invest in order to monitor and make beneficial long-term adjustments instead of short-term profits.	Supports hypothesis 3.
Chen, et al. (2008)	New Zealand (259 companies listed on the New Zealand Stock Exchange)	The Q ratio is positively related to the total institutional shareholding ratio and ownership promotes strong corporate performance.	Supports hypothesis 3.

Table 3. Findings of studies relevant to total institutional ownership and company performance (continued)

<i>Authors</i>	<i>Country and number of companies tested</i>	<i>Findings</i>	<i>Link with the current study</i>
Yuan <i>et al.</i> (2008)	China (1 211 companies listed on the Shanghai Stock Exchange and Shenzhen Stock Exchange)	Mutual funds, as an institutional investor, have a positive effect on company performance.	Supports hypothesis 3.
Huang and Shiu (2009)	Taiwan (2 471 companies from databases maintained by the Taiwan Economic Journal)	Stocks with high foreign ownership outperform stocks with low foreign ownership. This is due to the monitoring and disciplinary role played by the foreign investors.	Indirectly supports hypothesis 3.
Bhattacharya and Graham (2009)	Finland (98 companies that are publically traded)	A more equal distribution of the voting power among the largest institutional stakeholder may have positive effects on a firm's performance.	Supports hypothesis 3
Gürbüz <i>et al.</i> (2010)	Turkey (164 companies on the Istanbul Stock Exchange)	Institutional investors improve the performance of companies.	Supports hypothesis 3.
Aggarwal <i>et al.</i> (2011)	Various companies – classified as US and non-US	Institutional ownership positively influences corporate governance by acting as a disciplinary mechanism for poorly performing CEOs, which also leads to increases in company value.	Supports hypothesis 3.
Choi <i>et al.</i> (2012)	Korea (301 companies listed on the Korean Stock Exchange)	Institutional shareholders are positively associated with technological innovation performance.	Supports hypothesis 3.
Fung and Tsai (2012)	United States (2 249 companies from the NYSE, AMEX and NASDAQ)	Institutional shareholders improve firm performance based on the capital expenditure decisions made.	Indirectly supports hypothesis 3.
Alipour (2013)	Iran (60 companies listed on the Tehran Stock Exchange)	Significant, positive relationships exist between institutional ownership and ROA, ROE, and Tobin's Q.	Supports hypothesis 3.
Tsai and Tung (2014)	Taiwan (137 companies listed on the Taiwan Stock Exchange)	There is an increase in company performance when there are higher levels of institutional ownership.	Supports hypothesis 3.
Jafarnejad, Jory and Ngo (2015)	United States of America (11 882 companies on the Compustat database)	Higher levels of institutional shareholders increase company value.	Supports hypothesis 3.

Source: compiled by authors

5.4 Stability of total institutional shareholding and company performance

Due to the durability of their ownership, stable institutional investors have ample opportunities to learn about the investee company and have greater incentives to monitor them effectively on an ongoing basis. Firstly, this is likely to reduce the agency costs. Secondly, long-term institutional ownership makes it possible for the directors to engage in longer-term investment, leading to improved long-term performance (Jensen and Meckling, 1976), by decreasing the possibility that directors will make unsatisfactory decisions (Navissi and Naiker, 2006: 249). Based on their connection to financial markets, stable institutional investors can also help the directors to bring about increased demand for and improvement

of the liquidity of its shares. Thirdly, stable institutional owners can improve corporate governance by pressuring the directors to change the executive compensation structure to better align the interests of the directors with those of the shareholders (Elyasiani and Jia, 2010: 607). Don and Ozkan (2008) further show that long-term dedicated institutions generally restrain the level of director pay and strengthen the pay-performance link. This view is confirmed by Shleifer and Vishny (1986, 1997) and Gillian and Starks (2003) who agree that larger institutional owners give them a significant incentive to become informed, involved owners.

A summary of the main findings of studies relevant to the stability of institutional ownership and company performance is presented in Table 4.

Table 4. Findings of studies relevant to stability of total institutional ownership and company performance

<i>Authors</i>	<i>Country and number of countries tested</i>	<i>Findings</i>	<i>Link with the current study</i>
Chen <i>et al.</i> (2007)	United States of America (2 150 merger deals on the Mergers and Acquisitions database of Securities Data Company)	Where there are concentrated holdings, the institutional investors monitor directors to ensure good directors decisions in order to make long-term gains (Chen <i>et al.</i> 2007: 304)	Supports hypothesis 4.
Elyasiani and Jia (2010)	United States of America (1 532 companies from the Centre for Research in Equity Prices at the University of Chicago, Thomson Financial, Compustat and ExecuComp databases)	Stable institutional ownership is associated with better corporate company performance.	Supports hypothesis 4.
Fung and Tsai (2012)	United States of America (2 249 companies listed on the New York Stock Exchange, NASDAQ and Amex)	Institutional ownership improves company performance through capital expenditure decisions.	Supports hypothesis 4.
Callen and Fang (2013)	Various observations from the Thompson-Reuters Institutional Holdings Database	Institutional shareholdings act as monitors and the more stable the institutional investors, the greater the chance of preventing future stock price crash risk by preventing bad new hoarding by managers.	Indirectly supports hypothesis 4.
Hsu and Wang (2014)	Taiwan (647 companies listed on the Taiwan Stock Exchange)	Long-term institutional shareholders are associated with higher company performance.	Supports hypothesis 4.
Jafarnejad <i>et al.</i> (2015)	United States of America (11 882 companies on the Compustat database)	Stable levels of institutional shareholders increase company value	Supports hypothesis 4.

Source: compiled by authors

Based on studies listed in Table 4, there is evidence of a positive correlation between the stability of institutional ownership and company performance.

It is therefore expected that:

H4: There is a positive correlation between the stability of institutional shareholding and company performance.

6 Methodology

6.1 Sample and data

The sample selected was 71 of the Top 100 companies listed on the JSE for the 2009 to 2013 reporting periods, based on market capitalisation as at 30 September 2013. The Top 100 companies listed on the JSE are the largest and have the most significant trading activity. These companies are also most likely to have the most institutional shareholders. The sample included only South African companies which had been listed for at least five years and had information available on the INET McGregor BFA database for the prescribed sample period. Table 5 summarises the sample selection process.

6.2 Data collection

Information regarding shareholding was collected from the shareholding function on the INET McGregor BFA database. Information regarding headline earnings per share, income, leverage, return on equity, and return on capital employed was gathered from the financial ratio function on the INET McGregor BFA database. Information regarding the Tobin's Q formula was gathered from the financial models function on the INET McGregor BFA database.

Table 5. Summary of sample selection process

Top 100 companies listed on the JSE on 30 September 2013	100
Less:	
1) companies primarily listed on other exchanges (non-South African companies)	(14)
2) companies listed for less than three years (listing date after 1 January 2009)	(9)
3) companies where information not available on McGregor BFA for sample period	(6)
Final sample	71

6.3 Research model

The prediction found in the hypothesis is that there is a positive correlation between the proportion international and domestic institutional ownership and the stability of international and domestic institutional ownership and company performance. More specifically, higher company performance is expected for companies with a higher percentage international, domestic and total institutional ownership and where the total institutional ownership remained stable. Institutional ownership, both internationally and locally as well as the stability of institutional

ownership can have a monitoring effect on companies and improve company performance. Good company performance also attracts stable and long institutional investors, both locally and internationally (Hsu and Wang, 2014).

An ordinary least squares (OLS) model was used to test the relationship between Tobin's Q and ROA (dependent variables for company performance) and the international, domestic and total institutional ownership and the stability of institutional shareholding. The model was estimated as follows:

$$\text{TOBIN'S Q / ROA} = \beta_0 + \beta_1 \text{SHAREI}_{jt} + \beta_2 \text{SHARED}_{jt} + \beta_3 \text{SHARET}_{jt} + \beta_4 \text{SSHARET}_{jt} + \beta_5 \text{SIZE}_{jt} + \beta_6 \text{HEPS}_{jt} + \beta_7 \text{DEBT}_{jt} + \beta_8 \text{PROFIT}_{jt} + \beta_9 \text{GROWTH}_{jt} + \varepsilon \quad (1)$$

Where: TOBIN'S Q = Measured as market value of equity plus book value of interest-bearing debt divided by the replacement costs of fixed assets.

ROA = Return on assets, measured by profit before interest and tax less total profit of extraordinary nature divided by total assets.

SHAREI = Number of shares owned by international institutions divided by the total number of ordinary shares at financial year end.

SHARED = Number of shares owned by domestic institutions divided by the total number of ordinary shares at financial year end.

SHARET = Total number of shares owned by institutions divided by the total number of ordinary shares of the company at financial year end.

SSHARET = Stability of total institutional shareholding from one financial year end to the next financial year end.

SIZE = The size of the company, measured as the natural log of sales for the year.

HEPS = The headline earnings per share measured as earnings attributable to the operational and capital investment activities of the company.

DEBT = The leverage of the company, measured by the ratio of total debt to total assets at financial year end.

PROFIT = The profitability of the company, measured by the return on equity for the year, which is measured as net profit or loss for the year/divided by equity.

GROWTH = The growth of the company, measured by the yearly proportional change in sales.

j and t = Company and time subscripts respectively

ε = The regression residual

6.4 Dependent variables

The dependent variables used in this study are Tobin's Q (as used by: Douma *et al.*, 2002; Wei *et al.*, 2005; Bhattacharya *et al.*, 2009; Elyasiani and Jia, 2010; Alipour, 2013; Jafarinejad *et al.*, 2015) and Return on Assets (ROA) (as used by: Douma *et al.*, 2002; Filatotchev *et al.*, 2005; Chen *et al.*, 2007; Huang and Shiu, 2009; Gürbüz *et al.*, 2010; Fung and Tsai, 2012; Alipour, 2013).

6.5 Independent variables

The following independent variables were used:

- *SHAREI* = Percentage shareholding of international institutions (as used by Douma *et al.*, 2002; Wei *et al.*, 2005; Filatotchev *et al.*, 2005; Gürbüz *et al.*, 2010; Mizuno, 2010; Aggarwal *et al.*, 2011; Choi *et al.*, 2012; Mi Choi *et al.*, 2012)

- *SHARED* = Percentage shareholding of domestic institutions (as used by: Douma *et al.*, 2002; Filatotchev *et al.*, 2005; Navissi and Naiker, 2006; Cornett *et al.*, 2007; Chen *et al.*, 2007; Chen *et al.*, 2008; Yuan *et al.*, 2008; Huang and Shiu, 2009; Bhattacharya and Graham, 2009; Gürbüz *et al.*, 2010; Aggarwal *et al.*, 2011; Tsai and Tung, 2014)

- *SHARET* = Percentage shareholding of total institutional shareholders (as used by: Filatotchev *et al.*, 2005; Navissi and Naiker, 2006; Cornett *et al.*, 2007; Chen *et al.*, 2007; Chen *et al.*, 2008; Yuan *et al.*, 2008; Bhattacharya and Graham, 2009; Gürbüz *et al.*, 2010; Aggarwal *et al.*, 2011; Choi *et al.*, 2012; Fung and Tsai, 2012); Alipour, 2013; Tsai and Tung, 2014; Jafarinejad *et al.*, 2015)

- *SSHARET* = Stability of shareholding of total institutional shareholders (As used by: Cheng *et al.*, 2007; Elyasiani and Jia, 2010; Fung and Tsai, 2012; Callen and Fang, 2013; Jafarinejad *et al.*, 2015).

6.6 Control variables

The following control variables which could have an effect on the level of executive remuneration were used:

- *Company size (SIZE)* (measured by log of sales) (as used by Douma *et al.*, 2002; Wei *et al.*, 2005; Yuan *et al.*, 2008; Cornett *et al.*, 2012)
- *Headline earnings per share (HEPS)* (as used by Filatotchev *et al.*, 2005; Chen *et al.*, 2007)
- *Leverage (DEBT)* (used as a control measure due to the monitoring effect of debtholders) (as used by Chen *et al.*, 2008; Yuan *et al.*, 2008; Bhattacharya and Graham, 2009; Elyasiani and Jia, 2010; Choi *et al.*, 2012; Mi Choi *et al.*, 2012; Fung and Tsai, 2012; Alipour, 2013; Callen and Fang, 2013; Jafarinejad *et al.*, 2015)
- *Profitability (PROFIT)* (measured by return on equity) (as used by Chen *et al.*, 2008; Bhattacharya

and Graham, 2009; Callen and Fang, 2013; Alipour, 2013)

- *Growth of sales (GROWTH)* (measured by yearly proportional change in sale) (as used by Gürbüz *et al.*, 2010; Aggarwal *et al.*, 2011; Choi *et al.*, 2012).

7 Empirical results

7.1 Descriptive statistics

Descriptive statistics regarding the companies' dependent, independent and control variables were considered before calculating the regressions. The data was transformed to limit the skewness. Square root transformations were performed for the headline earnings per share, profitability and debt variables. Table 6 presents the descriptive statistics for the raw data (Panel A) and the transformed variables (Panel B) for years 2009–2013.

Table 6. Descriptive statistics

<i>Panel A: Descriptive statistics for raw data years 2009-2013</i>						
<i>Variables</i>	<i>No. of observations</i>	<i>Mean</i>	<i>Minimum</i>	<i>Maximum</i>	<i>Median</i>	<i>Std. Deviation</i>
TOBIN'S Q	353	1.742	0.000	11.550	1.310	1.337
ROA	353	0.1347	-0.2728	0.929	0.105	0.157
SHAREI	353	0.027	0.00	0.659	0.026	0.075
SHARED	353	0.374	0.000	0.900	0.299	0.209
SHARET	353	0.401	0.000	0.944	0.339	0.236
SSHARET	353	0.069	-0.953	0.936	0.031	0.221
SIZE (LOG)	353	16.615	8.010	19.810	16.651	0.075
HEPS	353	703.996	-1880.000	13772.000	399.750	1259.650
DEBT	353	3.284	0.000	288.970	1.000	16.053
GROWTH	353	0.149	-2.3451	6.4966	0.252	0.584
<i>Panel B: Descriptive statistics for transformed variables</i>						
<i>Variables</i>	<i>No. of observations</i>	<i>Mean</i>	<i>Minimum</i>	<i>Maximum</i>	<i>Median</i>	<i>Std. Deviation</i>
HEPS (sqrt)	353	22.051	-43.360	117.354	19.937	15.622
PROFIT (sqrt)	353	3.732	-20.560	11.190	3.825	2.746
DEBT (sqrt)	353	1.311	0.000	16.998	1.000	1.259

The descriptive statistics calculated for the research variables are presented in Table 6. As can be seen in this table, 353 firm year observations were studied. The average value of Tobin's Q is 1.7 with a median of 1.3 over the five-year sample period. This is higher than Yuan *et al.* (2008) who reported an average Tobin's Q for Chinese companies of 1.4 as well as a median for Tobin Q of 1.3, Bhattacharya and Graham (2009) who reported an average Tobin's Q of 1.2 and a median of 0.9 for Finish companies and Mi Choi *et al.* (2012) who reported an average Tobin's Q of 1.2 for Korean companies. Our findings are lower than those of Chen *et al.* (2008) who reported an average Tobin's Q of 2.39 for New Zealand companies, and Fung and Chai (2012) who reported an average Tobin's Q of 2.2 and a median of 1.6 for US companies.

Return on assets has an average of 13.5%. This is consistent with other reported studies. For instance,

Douma *et al.* (2002) reported an average ROA of 12.69% for Indian companies and Alipour (2013) reported an average ROA of 14.4% for Iranian companies. On average, international shareholders account for less than 3% of the total number of shares in issue over the five year sample period though it can be as high as 66% (maximum) in some firms. This is consistent with other reported studies; for instance, Douma *et al.* (2002) reported an average international shareholding of 3.62 % and a maximum of 49% for Indian companies, and Yuan *et al.* (2008) reported an average of 4% international shareholding with a maximum of 70% for Chinese companies.

On average domestic institutional shareholders held 37% of the total number of shares in issue over the five-year sample period, rising to 90% in some of the sample companies tested. This is consistent with reported studies; for instance, Douma *et al.* (2002) reported an average of 35.6% for domestic

institutional shareholders and a maximum of 100% for Indian companies and Choi *et al.* (2012) reported an average of 31.3% and a maximum of 94.7% for Korean companies. The stability of the shareholding of total institutional shareholders was on average 7% over the five-year sample period. Control variables show that the standard deviation of the size of the company is 7.5, indicating that the sample covers companies that are within the same range, which can be expected from the 71 of the Top 100 companies tested. The average headline earnings per share are 704c per share. The average leverage is 3.3, indicating high debt levels for the companies tested. The average growth rate of sales for the sample companies tested over the five-year period is nearly 15% over the five-year period tested, compared to the average South African GDP over this period of 1.85% (The World Bank, 2015).

7.2 Correlations

Pearson's correlations were calculated to determine if there are any significant relationships between company performance (tested as Tobin's Q and ROA) and domestic, international and total institutional ownership and the stability of institutional ownership and certain control variables. This is reported in Table

7. Significance levels of 1% and 5% were considered material to determine the relationships between dependent and independent variables.

As expected, Tobin's Q and ROA are highly related (at the 1% level) at 65.3%. The highest correlation of any explanatory variable with a performance measure for the 71 of the top 100 South African companies is SHARED and SHARET. The highest significant relationship between Tobin's Q and any of the independent variables is with SHAREI of 12.4% (significant at the 5% level). The highest significant positive relationship is between ROA and PROFIT (59.6%) and HEPS (28.6%) (at the 1% level) and a negative relationship with DEBT at the 1% level.

As expected, there is a significant relationship between SHAREI and SHARET (24.9%) and stability of institutional shareholding (22.1%) at the 1% level. Also as expected, there is a significant relationship between domestic institutional shareholding and total institutional shareholding (97.7%) and SSHARET (30.9%) at the 1% level. A significant relationship exists between SIZE and HEPS (at the 1% level) and GROWTH (at the 5% level). A significant relationship also exists between HEPS and PROFIT (at the 5% level).

Table 7. Pearson correlation matrix

	TOBIN'S Q	ROA	SHAREI	SHARED	SHARET	SSHARET	SIZE	HEPS	DEBT	PROFIT	GROWTH
TOBIN'S Q	1	.653**	.124*	.050	.075	.061	-.151**	-.124*	-.097	-.373**	.045
ROA		1	.021	.051	.054	.028	-.066	.286**	-.184*	.596**	.008
SHAREI			1	.035	.249**	.221**	-.174**	.053	.029	.005	.009
SHARED				1	.977**	.309*	-.034	.019	-.116*	-.049	-.059
SHARET					1	.347**	.005	.249**	-.106*	.047	-.055
SSHARET						1	.098	.045	-.021	.031	-.080
SIZE							1	.165**	.009	-.053*	.106*
HEPS								1	.081*	.360*	.006
DEBT									1	-.175*	-.045
PROFIT										1	.089
GROWTH											1

Note: ** Significant at the 0.01 level, * Significant at the 0.05 level

7.3 Regression results

The findings of the level and stability of institutional ownership's influence on company performance of the 71 of the Top 100 companies listed in South Africa are discussed here. Table 8 shows the results of the OLS regression performed. The main interest in Table 8 is the sign and the significance of the independent and control variables tested. The adjusted square multiple regression was significantly different from zero for Tobin's Q ($F=20.258$, $p>001$) and 33.2% of the variation of Tobin's Q was explained by the independent and control variables. The adjusted square multiple regression was significantly different from zero for ROA ($F=31.511$, $p>001$) and 37.9% of the variation of ROA was explained by the independent and control variables.

The results show that SHAREI uniquely and significantly contributes to the prediction of Tobin's Q at the 1% level. This demonstrates that for the South African companies tested, higher international institutional shareholding significantly contributes to the prediction of future opportunities in a company (measured as Tobin's Q). Douma *et al.* (2002) (for Indian companies), Wei *et al.* (2005) (for Chinese companies), Huang and Shiu (2009) (for Taiwanese companies) and Mi Choi *et al.* (2012) (for Korean companies) found that foreign institutional ownership also significantly contributes to the prediction of Tobin's Q. These countries, including South Africa are considered to be part of the emerging markets, according to a study performed by Bloomberg (2014). Hypothesis 1 is therefore supported for Tobin's Q

with regards to international institutional ownership for the 71 companies out of the top 100 companies tested in South Africa.

SHARED, SHARET and SSHARET uniquely and significantly contribute to the prediction of ROA at the 5% level for 71 of the top 100 companies tested in South Africa. This indicates that domestic, total and stability of institutional shareholders has an influence on the historical value of the 71 of the top 100 South African companies tested. This is consistent with the findings of Douma *et al.* (2002) (for Indian companies), Gürbüz *et al.* (2010) (for Turkish companies), Elyasiani and Jia (2010) (for US companies), Fung and Tsai (2012) (also for US companies) and Tsai and Tung (2014) (for Taiwanese companies). All these, (except for the US which is a developed country) are considered emerging markets (Bloomberg, 2014). Hypotheses 2, 3 and 4 are therefore supported for return on assets (ROA) for the 71 of the top 100 companies tested in South Africa.

SIZE has a statistical significant relationship at the 1 % level with Tobin's Q for the 71 of the top 100 companies tested in South Africa. This is consistent with the prediction and the findings of Yuan *et al.*

(2008) for Chinese companies, also an emerging market (Bloomberg, 2014).

The regression results further indicate that HEPS is significantly related to ROA on the 5% level for the 71 of the top 100 South African companies tested. This is consistent with Filatotchev *et al.* (2005) (for Taiwanese companies), Chen *et al.* (2007) (for US companies) and Choi *et al.* (2012) (for Korean companies). Both Korea and Taiwan are like South Africa, considered to be emerging markets (Bloomberg, 2014).

PROFIT significantly statistically contributes to Tobin's Q and ROA on the 1% level for the 71 of the top 100 South African companies tested. This is consistent with what Chen *et al.* (2008) found for New Zealand companies. No relationship exists between GROWTH, DEBT and Tobin's Q and ROA for the 71 of the top 100 South African companies tested. This is not what was predicted but is consistent with what Gürbüz *et al.* (2010) (Turkish companies) and Aggarwal *et al.* (2011 (US companies) found.

The data satisfied the assumptions of multicollinearity, normality of residuals and homoscedasticity. Stationarity is not a problem as ratios were used.

Table 8. Regression results

Variable	Prediction	TOBIN'S Q		ROA	
		Coefficients	p-value	Coefficients	p-value
SHAREI	+	3.200	.009**	.240	.520
SHARED	+	-.147	.595	1.879	.058*
SHARET	+	.100	.827	1.361	.065*
SSHARET	+	-.385	.664	-.520	.034*
SIZE	+	.132	.005**	.271	.916
HEPS ¹ (sqrt)	+	-.100	.800	-.001	.023*
DEBT ¹ (sqrt)	-	.001	.744	.065	.905
PROFIT ¹ (sqrt)	+	-.018	.001**	1.915	.000**
GROWTH	+	.110	.331	-.100	.682
R-SQUARED		.349		.391	
ADJUSTED R-SQUARED		.332		.379	
N		354		354	
F		20.528		31.811	

Note: ** Significant at the 0.01 level, * Significant at the 0.05 level

7.4 Additional analysis

To test the robustness of results, an additional analysis was performed. The regression was re-tested by excluding the control variables of sales, headline earnings per share, leverage, return on equity and growth of sales. The results obtained were consistent with the original regression performed. Since no differences were found between the original regression model and the one excluding the control variables, only the original regression analysis is included in Table 8.

8 Summary and conclusion

This study investigates the relationship between institutional share ownership (both international and domestic) and the stability of institutional share ownership and firm performance by using data for 71 of the top 100 South African listed companies. The contribution of this study includes the stability of institutional shareholding, while previous studies focused on the proportion of institutional shareholding. This study proves that both the proportion and the stability of institutional shareholding are important to ensure the monitoring effectiveness of institutional shareholders.

Furthermore, international institutional shareholding has an effect on future firm performance as measured by Tobin's Q; thus hypothesis 1 is supported for the 71 of the top 100 companies tested in South Africa. Domestic institutional shareholding, total institutional shareholding and the stability of shareholding of total institutional shareholders have an effect on historical firm value measured as return on assets; thus hypotheses 2, 3 and 4 are supported for the 71 of the top 100 companies tested. Institutional shareholders who holds shares for a longer period of time have the advantage to get to know the company and incentives to act as an important corporate governance monitoring mechanism. The findings of the study emphasize the fact that directors of a company need to build positive relationships with institutional investors to boost firm performance.

Future research may employ alternative firm performance measures such as return on equity, headline earnings per share, market value added or shareholding returns to test the effect of institutional shareholding on these factors. Institutional shareholdings could be further split into different institutions such as pension funds, mutual funds, insurance companies and banks.

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