

Corporate Governance Practices and Financial Performance of Firms Listed on the Zimbabwe Stock Exchange

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Abstract: Purpose: This study examines how corporate governance practices influence performance of firms listed on the Zimbabwe Stock Exchange.

Design/methodology/approach: The fixed effects (FE) model is estimated on a panel of 29 non-financial firms listed on the Zimbabwe Stock Exchange for the period between 2010 and 2016. Firm performance was measured using dependent variables return on assets (ROA) and return on equity (ROE) calculated from the firms' financial reports available online. The panel data include fixed effects (FE) and random effects (RE) estimators. The Hausman test framework is used to select the most efficient and consistent alternative.

Findings: The study finds evidence to support the need for good corporate governance practices in Zimbabwe. Board independence and board gender diversity were found to have a significant positive relationship with ROA. The study further finds a positive significant relationship between board independence, board gender diversity, board size and ROE.

Originality/value: Although many previous studies have studied this relationship, the current study is the first to investigate the impact of good corporate governance practices with a specific focus on the Zimbabwe stock exchange.

Key words: 'Corporate Governance Practices', 'Firm Performance', 'Board Independence', 'Zimbabwe Stock Exchange', 'Fixed Effects Model'

I. INTRODUCTION

The corporate governance subject has aroused significant research interest around the world in the past few decades fueled by dramatic corporate scandals and crisis such as the massive bankruptcies of Enron, WorldCom (Deloitte, 2016; Zabri, Ahmad, & Wah, 2016; Fratini & Tettamanzi, 2015). The aftermath of these scandals on both the economic and social front (Fratini & Tettamanzi, 2015) and the financial crises arising from the capital crisis in the United States of America and the Sovereign Funds crisis in the European Union (IODSA, 2016; Villanueva-Villar, Rivo-Lopez, & Lago-Penas, 2016) are among the most significant drivers to serious investment in corporate governance issues around the globe. In Zimbabwe serious attention to corporate governance

followed the collapse of several commercial banks that had very slack corporate governance structures and processes from as far back as 2003 (Muranda, 2006). The salarygate scandal in the Zimbabwe parastatals unearthed between 2013 and 2014 showed another dark side, adding voices on the need for robust governance structures in the country's organisations (Rusvingo, 2014).

Public opinion on whether the demise of these once elite corporations was a result of poor governance structures and processes in which management acted in their own interest and not those of shareholders, and that there was no monitoring system to equilibrate the concentration of power in the hands of management to prevent excessive risk taking behavior and opportunism soured in the aftermath of the scandals (Fratini & Tettamanzi, 2015; Rusvingo, 2014; Muranda, 2006). In the end apart from inheriting the king report on governance by the Institute of Directors of Southern Africa (IODSA, 2016) Zimbabwe launched its own code, The Zimbabwe National Code on Corporate Governance in 2015. Prior to Launching the code corporate governance practices were regulated by the Companies Act (Chapter 24:03), the Zimbabwe Stock Exchange Act (Chapter 24:18) ZSE listing requirements, the Public Finance and Management Act (Chapter 22:19) as well as codes of various professional bodies such as the Institute of Directors of Zimbabwe (IODZ) (Maune, 2015).

The aim of this research is to determine the presence and significance of a relationship between corporate governance practices and performance of companies listed on the Zimbabwe stock exchange. The first objective was to determine the corporate governance practices of the companies listed on the Zimbabwe stock exchange. Secondly the study set out to determine the performance of companies listed on the Zimbabwe Stock Exchange. Thirdly the study set out to establish the relationship among selected variables and the significance of the relationships using four hypotheses.

The current study estimates the FE model based on a sample of 29 non-financial firms listed on the Zimbabwe Stock

Market for the period from 2009 to 2016. The financial reports for the year 2009 were the first to be reported after the dollarization of the Zimbabwe economy. Firm performance was measured using dependent variables return on assets (ROA) and return on equity (ROE) calculated from the firms' financial reports available online.

The study established that good corporate governance practices are important in determining the financial performance of firms listed on the Zimbabwe Stock Market. Board independence and board gender diversity were found to have a significant positive relationship with ROA. A positive significant relationship was observed between board independence, board gender diversity, board size and ROE. The complexity of getting information on some companies means that some very important samples may have been left out. There are also ownership changes, mergers and acquisitions that have happened during the period under research. These changes could potentially distort data that was used in this research.

The market size of Zimbabwe with only 65 listed Companies is very small with majority of companies distressed. Moreover the operations of the Zimbabwe stock exchange seem to be immature as evidenced by lack of disclosure of data by most Companies on their website. It is therefore suggested that this research be expanded to a regional level study of Companies listed on all bourses of markets in of the size of Zimbabwe for example SADC bourses excluding South Africa's JSE or Sub-Saharan Africa.

II. LITERATURE REVIEW.

2.1 Theoretical Framework

The main issue seems to hover around the Agency Theory, though other schools of thought; the Stewardship Theory and the Stakeholder Theory have had their fair share of contribution (Deloitte, 2016; Villanueva-Villar, Rivo-Lopez, & Lago-Penas, 2016). According to (Song, Wang, & Cavusgil, 2015) the Agency Theory has been characterized as a theory of ownership structure of the firm and discusses the relationship between Principals and Agents. At the core of the Agency relationship is the degree of separation between ownership and control resulting in a potential conflict of interest between Shareholders (Principals) and Managers (Agents) (Fratini & Tettamanzi, 2015). This relationship is described by (Bouckova, 2015) as a contractual relationship in which the Principal employs the Agent to perform some action in his favour. In this relationship, the Principal will delegate decision-making authority to the agents and expect that agents will perform certain functions in exchange for a reward. The perspective of the agency theory which is based on the economic rationality of individuals (Fratini & Tettamanzi, 2015) suggest that the managers who have been assigned relevant powers and resources, will tend to follow their own interests instead of that of principals. The fundamental problem becomes that of dealing with behavior

of the agent and his desire to maximize personal utility function which may not be consistent with the objectives of the principals (Bouckova, 2015). Central to agency problem is information asymmetry in which one part has an information advantage of the other. According to (Bouckova, 2015) the agent usually has information advantage over the principal as a result of direct involvement in the daily operations of the firm.

2.2 Board Size

Board size is determined by the total number of directors on the board. Board sizes vary across nations as established by (Zabri, Ahmad, & Wah, 2016). From an agency theory perspective, having a higher number of directors on the board could enhance control on management thus contributing to a better performance. This view is also supported from a resource based theoretical perspective which according to (Fratini & Tettamanzi, 2015) links a higher number of directors to a stronger ability for corporations to benefit from their specialized skills by creating a long-term relationship with strategic environment. However (Villanueva-Villar, Rivo-Lopez, & Lago-Penas, 2016; Fratini & Tettamanzi, 2015; Zabri, Ahmad, & Wah, 2016), show that empirical evidence on the relationship between board size and performance is not conclusive. (Villanueva-Villar, Rivo-Lopez, & Lago-Penas, 2016), argue that several researchers find the variable board size to be insignificant, while others find it to be significantly negatively associated with firm performance. Some even suggest that small boards of directors are more effective and that firms with smaller boards achieve higher market value. This according to the reviews by (Villanueva-Villar, Rivo-Lopez, & Lago-Penas, 2016) is a result of coordination and process problems that tend to outweigh the skills and expertise advantage of a larger board.

Based on the above contentions this study intends to support the agency perspective hence the following hypothesis:

$H_0 =$ Board size has a positive effect on the performance of companies listed on the Zimbabwe Stock Exchange.

2.3 Board Independence

The agency theory assumes that the role of directors is that guaranteeing that managers are acting in the best interest of shareholders. The roles of these directors are different and also vary according to levels of involvement in cooperate involvement (Fratini & Tettamanzi, 2015). The different types of directors are identified as executive directors, non-executive directors and independent non-executive directors. The effectiveness of the board as a monitoring function is proven to be stronger when the number of independent members on the board is higher. In their findings (Villanueva-Villar, Rivo-Lopez, & Lago-Penas, 2016) identify some of the reasons why outside directors are considered to be more effective than their inside counterparts. They suggest that outside directors' experience in other companies, consideration of their reputation in the managerial work

market, greater objectivity and expertise contribute immensely to board effectiveness. The King Code of Governance for Southern Africa (IDoSA, 2009) emphasizes the need for balance of power on the board and recommends that the majority of board members should be non-executive who should be independent.

Independent directors as established by (Villanueva-Villar, Rivo-Lopez, & Lago-Penas, 2016) are “those that will be able to carry out their roles, having been appointed according to their personal and professional conditions, without being influenced by the relationship with the company, its significant shareholders or directors.” According to suggestions by (Edwards & Clough, 2005) an independent director should not be a former employee, not a major shareholder, not holding a significant contractual, supplier, or advisory relationship with the company and does not have any other significant interest in the company which could impair the director’s ability to act in the interest of the company. This variable is commonly measured as a percentage of independent non-executives on the board (Deloitte, 2016).

(Fratini & Tettamanzi, 2015; Villanueva-Villar, Rivo-Lopez, & Lago-Penas, 2016), argue that the empirical findings on the relationship between board independence and firm performance are not conclusive sitting several research findings showing a positive relationship between board independence and firm performance while other research show no, or negative relationships. (Zabri, Ahmad, & Wah, 2016), weighed in with their own findings showing that there is no relationship between board size and firm performance suggesting that empirical evidence on the relationship between board independence and firm performance are inconclusive. (Munisi & Randoy, 2013) argue that there is a strong case that board independence is a key determinant of board effectiveness. The current study makes the following proposition:

H_0 = Board independence has a positive effect on the performance of companies listed on the Zimbabwe Stock Exchange.

2.4 Board Gender Diversity

Studies on board diversity are mainly centered on gender diversity (Deloitte, 2016) though board diversity also includes several other demographic attributes which might have an effect on financial performance and quality of strategic decision-making. (Christopher, 2016), acknowledges three major theories; the Agency Theory, the Resource Dependency Theory and the Social Psychological Theory in boardroom gender diversity and corporate governance research. Support for the agency theory is based on arguments that women boardroom members tend to bring a fresh perspective on complex issues which can help correct informational biases in strategy formulation and problem solving, and suggestions that women also tend to take their roles more seriously, leading to increased civilized behavior

and improved corporate governance (Singh, Terjesen, & Vinnicombe, 2008).

Several research findings suggest that gender diversity reduces the level of the principal-agent problem hence giving assurance to shareholders of getting positive returns on their investment through the firm’s improved performance. On the other hand from the resource dependency theory women on boards is believed to promote a better understanding of the market place it serves by matching the diversity of a firm’s directors to the diversity of its employees and customers (Christopher, 2016).

Recent research by (Deloitte, 2016) point out that there are several academic research suggesting that having women on the board has a positive impact on the performance of the firm (Adams & Ferreira, 2009; Cater, Simkins, & Simpsons, 2003; Chen, Cheung, Stouraitis, & Wong, 2005). (Chen, et al, 2005), suggest that heterogeneous groups produce higher quality decisions than homogeneous groups in complex tasks and generate more innovative solutions than homogeneous groups through cognitive conflict. A research based on a US sample by (Cater, Simkins, & Simpsons, 2003) finds that the proportion of women on the board is positively related to market performance based on the Tobin’s Q. The call for gender diversity in the boardroom around the world has increased as noted by (Adams & Ferreira, 2009). (Christopher, 2016), sums it up by suggesting that if gender diversity displays a positive relationship with firm profits, then the economic implications of gender diversity are influential as they enable higher overall economic activity. Inversely if gender diversity does not show a positive relationship with profits, the issue of gender diversity becomes primarily a public policy affair of ensuring an equal representation and reducing the “glass ceiling effect” on women in the workforce.

There are other schools of thought like Social Psychological Theory that argue that homogeneous groups are more efficient and effective because communication is more frequent and opinions are likely to be similar. Moreover homogeneous groups are more corporative and tend to experience fewer emotional conflicts. In an examination of the relationship between board diversity and in firm performance on U.K. SMEs (Shehata, Salhin, & Moataz, 2017) obtained a significant negative association between gender diversity and firm performance. Another research by (Darmadi, 2011) on 169 sampled listed Indonesian firms established a significant negative association between gender diversity with both accounting and market performance.

In this research we consider board diversity to represent the proportion of female directors on a company’s board. The current study takes the agency view and proposes the following:

H_0 = Board diversity has a positive effect on the performance of companies listed on the Zimbabwe Stock Exchange.

2.5 Foreign Board Diversity

Including foreign directors on the board is a sign of the company's intention to quickly start importing a new corporate governance system. The Zimbabwe situation is critical following the introduction of the Zimbabwe Indigenisation and Economic Empowerment Act. The Act requires that foreign-owned companies should offer at least 51 percent of their shares to indigenous Zimbabweans. One would therefore expect that the coming in of this act will have an effect on the number of foreign directors on various boards. These foreign directors are believed to provide knowledge about foreign markets both in the business and the financial markets (Oxelheim & Randoy, 2003). A research conducted by (Oxelheim & Randoy, 2003) on the effect on performance of firms in the Nordic regions of recruiting foreign board members from United States of America, Canada and the United Kingdom, showed that firms that had an Anglo-American board member significantly performed better than their counterparts that did not. Conversely though, (Masulis, Wang, & Xie, 2012) observed that firms with foreign directors on the board displayed significantly poorer results than their counterparts. Others (Bremholm & Svensson, 2015) found that foreign directors on board have a significant positive relationship with firm performance. In this view the following hypothesis was formulated:

H_0 = Foreign board diversity has a positive effect on the performance of companies listed on the Zimbabwe Stock Exchange.

III. METHODOLOGY

This particular research is descriptive, causal and explanatory in nature. It is descriptive because it sought to describe the state of corporate governance in Zimbabwe achieved by the data gathered for the predetermined variables. According to (Johnson & Christensen, 2012) descriptive research aims to provide an accurate description of a specific phenomenon's characteristic. In order to test a theory that describes a positive or negative relationship cause and effect relationship amongst variables a research takes the explanatory nature (Mans-Kemp, 2014). The causality nature of the research was meant to demonstrate whether a change in one or more independent variable would cause a predictable change in ROA and ROE. According to (Coldwell & Herbst, 2004) the assumption in causal research is that the dependent variable is causally related to one or more independent variable.

3.1 Sampling, Data Collection & Analysis

In this particular research a combination of judgmental and convenience sampling was applied. According to (Gravetter & Wallnau, 2011) in convenience sampling, items are selected based on their inexpensiveness, convenience, and accessibility. In the end the more convenient population elements are thus chosen to be part of the sample. On the other hand judgment sampling is when a sample is drawn based on the judgment of the researcher. In this case

assumptions are that the researcher is familiar with the population's characteristics (Mans-Kemp, 2014).

We used one sample for the study. The sample comprises 29 non-financial companies listed on the Zimbabwe Stock Exchange (ZSE) from 2009 to 2016. From the original 65 companies listed, 9 Financial Companies were excluded. Additional 27 non-financial companies were excluded based on the impossibility of getting all required data about governance and, in some cases on the particular company's financial situation. Most of the excluded companies had no website links from the ZSE website. Upon search through other search engines, very limited financial and governance information was available. The data about corporate governance indicators such as board size, female members of the board, number of foreign directors on the board were obtained from the companies websites arrived at through links available on the ZSE website. ROA and ROE were obtained from the companies' published financial results obtainable from the companies' websites. In the case where these were not available, the ratios were calculated according to the formula given by (Rose & Hudgins, 2007):

$$\text{Return on Equity (ROE)} = \frac{\text{Total Revenues} - \text{Total Operating Expenses} - \text{Taxes}}{\text{Total Assets}} \times \frac{\text{Total Assets}}{\text{Total Equity Capital}}$$

- $\text{Return on Assets (ROA)} = \frac{\text{Net Income}}{\text{Total Assets}}$

Descriptive and inferential statistics on data collected were generated using Stata V13.

3.2 Definition of Variables

3.2.1 Return on Equity (ROE) & Return on Assets (ROA)

The dependent variables used in this study are accounting performance measures return on equity (ROE) and return on assets (ROA). According to (de Wet & du Toit, 2007), ROE is the result of dividing the book value of equity into profit after tax and preference dividends. ROE tells common shareholders how effectively their money is being employed and investors can determine whether a company is a profit-creator or a profit burner and management's profit earning efficiency (Kijewska, 2016). There are some arguments against the use of ROE as a performance measurement metric. (de Wet & du Toit, 2007), point out that the use of ROE is flawed citing the possibility that income statement earnings can be manipulated legally within the framework of generally accepted accounting principles (GAAPs). In addition the fact that ROE is calculated after the cost of debt, but before taking into account the cost of own capital creates a financial risk that may even cause the value of the company and share price to fall since ROE increases with more financial gearing. Another performance measurement metric, ROA as a measure of firm performance is widely recognized in specialized literature (Siminica, Circumaru, & Simion, 2012). According to (Majed, Said, & Firas, 2012) ROA is a ratio that measure

operating efficiency for the company based on the firm’s generated profits from its total assets. It is calculated as net profit after tax divided by total assets. (Mohd, Muammar, & Ainatul, 2014), describe ROA as a financial ratio that is used to determine the degree to which assets have been used to generate profits. A higher ROA is good for the company since it shows a higher return on investment.

Regardless of the suggested flaws (de Wet & du Toit, 2007), the use of ROE and ROA in the measurement of financial performance is common among researchers in corporate governance and firm performance research. (Tariq & Abbas, 2013), in their evaluation of the efficacy of the Pakistani Code of Corporate governance on a sample of 119 firms over a period of 8 years used amongst others ROE and ROA to measure firm performance. These measures were also used by (Zabri, Ahmad, & Wah, 2016) in their analysis of the relationship between performance and corporate governance of top 100 public listed companies in Bursa Malaysia. There are other several researches that have also made use of the same metrics with or without a mix with other metrics (Kumudini, 2010; Munisi & Randoy, 2013; Christopher, 2016; Darmadi, 2011). It has also been observed by (de Wet & du Toit, 2007), that ROE and ROA have been the all-time favourites and perhaps most widely used measure of corporate performance.

The independent variables are defined below.

Variable	Definition
Board Independence	The proportion of independent non-executive directors to the total board members.
Board Gender Diversity	The proportion of female board members to the total board members.
Zim GDP Growth Rate	Zimbabwe Growth Domestic Product Growth rate for 2009-2016
Board Size-Natural Logarithm	The Natural Logarithm of the board size
Assets-Natural Logarithm	The natural logarithm of the assets controlling for the size of the firm.
Foreign Board Diversity	The proportion of members of the board who are foreign to the total board members

In this research the variables Zim GDP growth rate and assets were included in-order to control for the effects on companies arising from the fluctuations of GDP growth rate and company size.

IV. DATA ANALYSIS AND DISCUSSION.

4.1 Descriptive Statistics

The descriptive statistics are presented in Table 1. The mean value of board size is 7 persons and variance is 2 persons. The standard deviation is low which implies that data tends to be closer to the mean. The lowest board size was 5 while the highest was 12. On the other hand the mean values of ROE and ROA obtained were -0.003 and 0.014 respectively. This means that the performance of most companies listed on the

Zimbabwe Stock Exchange is very poor. ROE had a higher standard deviation of 0.528 than ROA that had a standard deviation of 0.202. Both the mean and standard deviation values of board independence, board gender diversity and foreign board diversity are very close to each other. Board independence had a mean value of 0.186 and variance of 0.158 while the mean value of board gender diversity was 0.183 and the variance was 0.157. On the other hand the mean value of foreign board diversity was 0.191 and the variance was 0.157.

4.2 Inferential Statistics

4.2.1 Regression Models Considered and Applied

This particular research considered three regression models; the Pooled OLS Regression, Fixed Effects Regression and the Random Effects Regression. The Pooled OLS Regression coefficients are constant across the periods and units. On the other hand the random effects model allows for the inclusion of time invariant variables. Variation across entities is assumed to be uncorrelated with the independent variables. The fixed effects regression model controls for omitted variables in panel data that are constant over the period of time and vary across the cross sectional unit.

The basic estimated models are listed below:

The Pooled OLS Regression model:

$$y_{it} = \beta_0 + \beta_1 x_{it} + \epsilon_{it}$$

Where:

- y_{it} = DependentVariable
- β_0 = Intercept
- β_1 = RegressionCoefficient
- x_{it} = IndependentVariable
- ϵ_{it} = ErrorTerm

The Fixed Effect Model:

$$y_{it} = \beta_{0i} + \delta_t + \beta_1 x_{it} + \epsilon_{it}$$

Where:

- y_{it} = DependentVariable
- β_{0i} = istheinterceptforeachunit
- β_1 = RegressionCoefficient
- δ_t = dummyvariableforeachtime (t)
- x_{it} = IndependentVariable
- ϵ_{it} = ErrorTerm

The Random Effects Model:

$$y_{it} = \beta_0 + \beta_1 x_{it} + \mu_i + w_t + \epsilon_{it}$$

Where:

- y_{it} = DependentVariable
- β_0 = Intercept
- β_1 = RegressionCoefficient
- x_{it} = IndependentVariableforiandt

- $\varepsilon_{it} = \text{WithinEntityErrorTerm}$

4.2.2 Generating the Appropriate Model Stage One-Return on Assets (ROA)

Table 2, presents the results of the first attempt to derive the most appropriate model. We performed regressions on ROA the dependent variable against six independent variables: Board Independence, Foreign Directors, Zim GDP Growth Rate, Natural Logarithm of Board Size and Natural Logarithm of Assets. The Fixed effect model showed that all the six independent variables are positively related to ROA. However none of these six variables has statistical significance. The Random effect model generated results that showed three variables Board Independence, Board Gender Diversity and Zimbabwe GDP Growth Rate to be statistically significantly related to ROA with P-values 0.006, 0.016, 0.042 respectively. In this model, the proportion of foreign directors on the board shows a negative relationship with ROA. However this relationship has no statistical significance with a P-value of 0.627.

The differences arising from the results of these two models were addressed by applying the Hausman test statistic. Given a model with one independent variable, the Hausman test statistic can be expressed as (Mans-Kemp, 2014):

$$H = \frac{(\beta_{1(FE)} - \beta_{1(RE)})^2}{\delta^2_{\beta_{1(FE)}} - \delta^2_{\beta_{1(RE)}}} \sim \chi^2_1$$

We used the Hausman test statistic to check the assumptions of the fixed effects regression model (Fratini & Tettamanzi, 2015). Using this test we were able to choose the most appropriate model. The null hypothesis of the Hausman test is that the random effects model is the preferred model. If the test result is significant i.e. ($p < 0.05$), the fixed effect model can thus be adopted. The Hausman test hypothesized the following:

H_0 : The random effects model is appropriate

H_1 : The fixed effects model is appropriate

The results of the Hausman test are shown below:

$$\begin{aligned} \text{chi2}(6) &= (b - B)'[(V_b - V_B)^{-1}](b - B) = 7.16 \\ \text{Prob} > \text{chi2} &= 0.3063 \end{aligned}$$

The p-value of 0.3063 is statistically insignificant therefore there is no sufficient evidence to reject the null hypothesis. In this case the random effect model was found to be appropriate. Further the Pesaran CD (Cross-Sectional Dependence) test whether the residuals are correlated across the 29 companies was applied. The test hypothesized the following:

H_0 : There is no serial correlation

H_1 : There is serial correlation

The result of the Pesaran CD (Cross-Sectional Dependence) test gave a significant p-value of 0.0000. This resulted in the rejection of the null hypothesis. This means that there is serial correlation. At this stage robust was applied and this becomes the most suitable Model. This model shows that Board Independence, Board Gender Diversity, Zim GDP Growth Rate, Board Size-Natural Logarithm and Assets Natural Logarithm are positively related to ROA. However, only board independence, board gender diversity and Zim GDP Growth rate are statistically significant, with p-values of 0.003, 0.030 and 0.016 respectively. The Proportion of Foreign Directors on the board shows a negative relationship though this result is not statistically significant with a p-value of 0.592.

$$\begin{aligned} ROE_1 &= -0.282 + 0.305(Ind) - 0.311(Bgenderdiv) \\ &\quad - 0.063(Bforeigndir) + 0.609(GDPgr) \\ &\quad + 0.068(\ln_bsize) + 0.001(\ln_Asset) \end{aligned}$$

4.2.3 Generating the Appropriate Model Stage Two-Return on Assets

In generating table 3, one variable, proportion of foreign directors on the board which was found to be negatively related to ROA (table 2 above) was dropped. Again the fixed effects model shows that all the five independent variables are positively related to ROA though none of them is statistically significant. The random effects model shows board independence, board gender diversity and Zim GDP growth rate to be positively and significantly related to ROA with p-values of 0.006, 0.011 and 0.044 respectively. The Hausman test show that,

$$\begin{aligned} \text{chi2}(5) &= (b - B)'[(V_b - V_B)^{-1}](b - B) = 4.78 \\ \text{Prob} > \text{chi2} &= 0.4435 \end{aligned}$$

The p-value of 0.4435 is statistically insignificant therefore we accept the null hypothesis that the random effects model is the most appropriate. However after applying the Pesaran CD (Cross-Sectional Dependence) test, the p-value 0.0000 is found to be statistically significant. We therefore conclude that there is serial correlation in the data. After applying robust the results show a positive relationship between the dependent variable ROA and all the five independent variables. However only three of these: board independence, board gender diversity and Zim GDP growth rate are statistically significant with p-values of 0.002, 0.004 and 0.015 respectively.

The findings in this research with respect to board size conform to findings by (Lakhal, 2005; Zabri, Ahmad, & Wah, 2016) who found a positive but weak relationship between board size and firm performance. The results contradict findings from other studies such as (Shukeri, Ong, & Shaari, 2012; Adam & Mehran, 2003; Fratini & Tettamanzi, 2015). These studies found a positive and significant relationship between board size and firm performance. Other researchers (Villanueva-Villar, Rivo-Lopez, & Lago-Penas, 2016) observed that there is a significant number of studies that

found the relationship between board size and firm performance to be insignificant. They further observe researchers who argue that smaller boards are even more effective than larger ones better coordination outweighs the skills and expertise advantage brought about by larger boards. The findings on board independence show a positive and significant relationship with ROA. These findings agree with findings by (Barnhart, Marr, & Rosenstein, 1994). In another research, (Francis, Hassan, & Wu, 2012) established that board efficacy can be enhanced by board independence which leads to increased performance during a financial crises. In addition (Villanueva-Villar, Rivo-Lopez, & Lago-Penas, 2016) suggest that institutional investors believe that the future challenges in the field of corporate governance would be to ensure the independence of directors. Our predictive model becomes:

$$ROA = -0.282 + 0.291(Ind) + 0.279(Bgenderdiv) + 0.600(GDPgr) + 0.061(\ln_bsize) + 0.003(\ln_Asset)$$

4.2.4 Generating the Appropriate Model Stage 1-Return on Equity

Table 4 shows relationship between dependent variable ROE and six independent variables: Board Independence, Board Gender Diversity, Foreign Directors, Zim GDP Growth Rate, Board Size-Natural Log and Assets-Natural Log. We first ran a regression of ROE against the six independent variables. The fixed effects model shows that the proportion of foreign directors on the board and the Natural logarithm of assets are negatively related to ROE. However the relationship is not statistically significant. Only one variable-board independence was statistically significant with a p-value of 0.046. After regressing for ROE to the six independent variables using the Random effects model board independence became insignificant with a p-value of 0.065. Board gender diversity became the only variable with statistical significance with a p-value of 0.029. The Hausman test was then applied to find the most appropriate model.

$$chi2(6) = (b - B)'[(V_b - V_B)^{-1}](b - B) = 2.32$$

$$Prob > chi2 = 0.8880$$

The result show a p-value of 0.8880 which is statistically insignificant therefore we conclude that the random effects model is the most appropriate. However after carrying out the Pesaran CD (Cross-Sectional Dependence) test the results show statistical significance with a p-value of 0.0032. This means that there is serial correlation in the data. We then applied robust. The independent variables foreign directors and assets-natural logarithm show that they are negatively associated with ROE though the result is statistically insignificant. Four independent: board independence, board gender diversity, Zim GDP growth rate and board size become very significant with p-values of 0.001, 0.000, 0.018, 0.039 respectively.

$$ROE_1 = -0.505 + 0.758(Ind) - 0.129(Bgenderdiv) - 0.129(Bforeigndir) + 0.969(GDPgr) + 0.323(\ln_bsize) + 0.023(\ln_Asset)$$

4.2.5 Generating the Appropriate Model Stage 2-Return on Equity

The variable, proportion of foreign directors on the board was found to be negatively related to ROE (table 5). It was dropped when we generated results in table 4. Again the fixed effects model shows that excerpt for the independent variable assets natural logarithm which is negatively associated with ROE, all the other independent variables are positively related to ROE though only board independence is statistically significant while the rest are non-significant. The random effects model shows board independence, board gender diversity and Zim GDP growth rate to be positively related to ROE though only board gender diversity is statistically significant with a p-value of 0.019. The Hausman test show that,

$$chi2(5) = (b - B)'[(V_b - V_B)^{-1}](b - B) = 2.04$$

$$Prob > chi2 = 0.8440$$

The p-value of 0.8440 is statistically insignificant therefore we accept the null hypothesis that the random effects model is the most appropriate. However after applying the Pesaran CD (Cross-Sectional Dependence) test, the p-value 0.0053 is found to be statistically significant. We therefore conclude that there is serial correlation in the data. In order to be able to deal with the serial correlation problem we applied robust. The Robust results show a positive relationship between the dependent variable ROA and all the five independent variables. However only three of these: board independence, board gender diversity and Zim GDP growth rate are statistically significant with p-values of 0.002, 0.004 and 0.015 respectively. These findings are consistent with findings by for example by (Adams & Ferreira, 2009; Cater, Simkins, & Simpsons, 2003; Chen, Cheung, Stouraitis, & Wong, 2005). They found a significant positive relationship between board gender diversity and firm performance. However, (Shehata, Salhin, & Moataz, 2017; Darmadi, 2011), found a significant negative relationship between firm performance and board gender diversity.

$$ROE_2 = -0.548 + 0.517(Ind) + 0.694(Bgenderdiv) + 0.951(GDPgr) + 0.309(\ln_bsize) - 0.020(\ln_Asset)$$

V. CONCLUSION & RECOMMENDATIONS

The current study examined the relationship between corporate governance practices and performance of companies listed on the Zimbabwe stock exchange. The first objective was to determine the corporate governance practices of the companies listed on the Zimbabwe stock exchange. Secondly the study set out to determine the performance of companies listed on the Zimbabwe Stock Exchange. Thirdly the study set

out to establish the relationship among selected variables and the significance of the relationships using four hypotheses.

The study estimated the FE model based on a sample of 29 non-financial firms listed on the Zimbabwe Stock Market for the period from 2009 to 2016. The financial reports for the year 2009 were the first to be reported after the dollarization of the Zimbabwe economy. Firm performance was measured using dependent variables return on assets (ROA) and return on equity (ROE) calculated from the firms' financial reports available online.

The results show that good corporate governance practices are important in determining the financial performance of firms listed on the Zimbabwe Stock Market. Board independence and board gender diversity were found to have a significant positive relationship with ROA. A positive significant relationship was observed between board independence, board gender diversity, board size and ROE. The complexity of getting information on some companies means that some very important samples may have been left out. There are also ownership changes, mergers and acquisitions that have happened during the period under research. These changes could potentially distort data that was used in this research.

The market size of Zimbabwe seems with only 65 listed Companies is very small with majority of companies distressed. Moreover the operations of the Zimbabwe stock exchange seem to be immature as evidenced by lack of most Companies information on the website. It is therefore suggested that this research be expanded to a regional level study of Companies listed on all bourses of markets in of the size of Zimbabwe for example SADC bourses excluding South Africa's JSE or Sub-Saharan Africa.

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APPENDIX I

Table 1 Descriptive Statistics

	Mean (μ)	Variance (σ^2)	Standard Deviation (σ)	Minimum	Maximum	Sum
Return on Equity	-0.003	0.279	0.528	-5.186	0.684	-0.703
Return on Assets	0.014	0.041	0.202	-2.330	0.401	3.215
Board Independence	0.186	0.025	0.158	0.000	0.500	43.040
Board Size	7.427	2.791	1.671	5.000	12.000	1723.000
Board Gender Diversity	0.183	0.025	0.157	0.000	0.500	42.568
Foreign Board Diversity	0.191	0.025	0.157	0.000	0.500	44.353
Zimbabwe GDP Growth Rate	0.063	0.002	0.044	-0.003	0.119	14.558
Board Size-Natural Logarithm	1.980	0.051	0.226	1.609	2.485	459.325
Assets-Logarithm	17.875	1.437	1.199	15.124	20.952	3825.316
<i>N</i>	232					

Table 2: Generating the Appropriate Model Stage One-Return on Assets

	Fixed Effect Model	Random Effect Model	Robust
	ROA	ROA	ROA
Board Independence	0.348	0.305**	0.305**
	(1.902)	(2.765)	(2.981)
Board Gender Diversity	0.126	0.311*	0.311*
	(0.547)	(2.415)	(2.174)
Foreign Directors	0.18	-0.063	-0.063
	(0.788)	(-0.485)	(-0.536)
Zim GDP Growth Rate	0.413	0.609*	0.609*
	(1.153)	(2.034)	(2.403)
Board Size-Natural Log	0.33	0.068	0.068
	(1.232)	(0.820)	(0.724)
Assets -Natural Log	0.002	0.001	0.001
	(0.044)	(0.107)	(0.136)
Constants	-0.824	-0.282	-0.282
	(-0.920)	(-1.240)	(-1.953)
N	214	214	214
R-squared	0.176041	0.158	0.158
t-Statistics in Parentheses, *p<0.05, **p<0.01, ***p<0.001			

Table 3: Generating the Appropriate Model Stage Two-Return on Assets

	Fixed Effect Model	Random Effect Model	Robust
	ROA	ROA	ROA
Board Independence	0.357	0.291**	0.291**
	(1.958)	(2.735)	(3.029)
Board Gender Diversity	0.226	0.279*	0.279**
	(1.189)	(2.532)	(2.870)
Zim GDP Growth Rate	0.449	0.600*	0.600*
	(1.164)	(2.010)	(2.428)
Board Size-Natural Log	0.393	0.061	0.061
	(1.540)	(0.740)	(0.621)
Assets -Natural Log	0.003	0.003	0.003
	(0.071)	(0.274)	(0.349)
Constants	-0.961	-0.304	-0.282*
	(-1.095)	(-1.364)	(-2.484)
N	214	214	214
R-squared	0.173181	0.1621	0.1621
t-Statistics in Parentheses *p<0.05, **p<0.01, ***p<0.001			

Table 4: Generating the Appropriate Model Stage One-Return on Equity

	Fixed Effects Model	Random Effects Model	Robust
	ROE	ROE	ROE
Board Independence	0.997*	0.55	0.55**
	(2.008)	(1.848)	(3.270)
Board Gender Diversity	0.524	0.758*	0.758***
	(0.841)	(2.181)	(5.716)
Foreign Directors	-0.411	-0.129	-0.129
	(-0.662)	(-0.369)	(-0.755)
Zim GDP Growth Rate	0.746	0.969	0.969*
	(0.766)	(1.208)	(2.364)
Board Size-Natural Log	0.673	0.323	0.323*
	(0.926)	(1.441)	(2.064)
Assets -Natural Log	-0.039	-0.023	-0.023
	(-0.301)	(-0.023)	(-0.023)
Constants	-0.896	-0.505	-0.505
	(-0.368)	(-0.820)	(-1.595)
N	214	214	214
R-squared	0.096118	0.089	0.089
t-Statistics in Parentheses *p<0.05, **p<0.01, ***p<0.001			

Table 5: Generating the Appropriate Model Stage Two-Return on Equity

	Fixed Effect Model	Random Effect Model	Robust
	ROA	ROA	ROA
Board Independence	0.976*	0.517	0.517**
	(1.974)	(1.812)	(3.159)
Board Gender Diversity	0.294	0.694*	0.694***
	(0.569)	(2.353)	(5.177)
Zim GDP Growth Rate	0.664	0.951	0.951*
	(0.689)	(1.190)	(2.275)
Board Size-Natural Log	0.529	0.309	0.309*
	(0.764)	(1.417)	(2.090)
Assets -Natural Log	-0.042	-0.02	-0.02
	(-0.325)	(-0.631)	(-0.894)
Constants	-0.583	-0.548	-0.548
	(-0.245)	(-0.918)	(-1.708)
N	214	214	214
R-squared	0.093905	0.0875	0.0875
t-Statistics in Parentheses *p<0.05, **p<0.01, ***p<0.001			