

# Board Experience, Corporate Risk-Taking and Going Concern: Evidence from South Africa

*Joseph Olorunfemi Akande\**, *Olayinka Moses\*\** and *Dev Tewari\*\*\**

---

*Experience is arguably one of the most prominent corporate governance attributes, yet studies investigating traits of corporate governance in mitigating risk-taking behavior have ignored board experience. Using the Bayesian analytical method, the present study analyzes multivariate models of corporate governance attribute (i.e., board experience), corporate risk-taking and going concern of Johannesburg Stock Exchange (JSE) listed firms. The paper finds the sampled firms' board experience to be a key attribute that influences firm's risk-taking and going concern. Additionally, it finds that firms' risk-taking behavior significantly impacts their going concern prospects. The findings suggest the need for a better repositioning of corporate governance in the light of board experience.*

---

## Introduction

Fundamentally, corporate governance is based on the expectation that good governance mechanism is able to limit managers' opportunistic and excessive risk-taking behavior (Koerniadi *et al.*, 2014; Balachandran and Faff, 2015; and Wang *et al.*, 2015). Literature suggests that corporate governance practices drive firm value, and firms' specific risks play a significant role in achieving economic success for firms (Nguyen, 2011; and Koerniadi *et al.*, 2014). Empirically, corporate governance and firm value have been found to be related, with the relationship varied and some instances dependent on the corporate governance attributes employed. In particular, studies (e.g., Balasubramanian *et al.*, 2010; Ammann *et al.*, 2011; Shank *et al.*, 2013; and Ntim, 2015) have documented evidence suggesting the direct relationship between corporate governance and firm value. Other studies have equally shown that different corporate governance attributes relate differently with firm value (Black *et al.*, 2006a; Francis *et al.*, 2012; and Liu *et al.*, 2012). For instance,

---

\* Senior Lecturer, Department of Accounting, Economics and Finance, Namibia University of Science and Technology, Windhoek, Namibia; Secondary affiliation: Department of Accounting, University of Zululand, KwaDlangezwa, South Africa; and is the corresponding author. E-mail: jakande@nust.na

\*\* Lecturer, Department of Accounting, Victoria Business School, Wellington, New Zealand. E-mail: yinka.moses@vuw.ac.nz.

\*\*\* Professor, Department of Economics, University of Zululand, KwaDlangezwa, South Africa. E-mail: TewariD@unizulu.ac.za.

Francis *et al.* (2012) found evidence suggesting that a strong independent board positively affects firm performance, while Yammeesri and Herath (2010) found no significant relationship between corporate governance and the value of a firm, thus leading to an inconclusive inference for the relationship between corporate governance attributes and firm value.

In any case, firms' decisions and appetite for risk is a task that is overseen by the strategic team of organizations which in principle is the practical exercise of corporate governance mandate to enhance firm value. Undoubtedly, risk-taking is essential for business success since firms' resources will not be optimally utilized if the management fails to take appropriate level of risks. As asserted by Stulz (2015), "risk-taking is, of course, an essential part of business activity; without a willingness to take risk there is generally very little expected reward." What generally is the concern, however, is whether appropriate risk governance mechanism and best practices are followed by firm managers in making decisions relating to corporate risks. Thus, the question is whether managers assume risks that could threaten the financial survival of their corporation or otherwise? Which is consistent with corporate governance purpose of managing firms in the best interest of owners that also allows for a reasonable level of risk necessary to achieve competitive advantage.

The tension between agent and principal based on incentive-driven behavior may motivate managers to indulge in excessive risk-taking, thus jeopardizing the principal's interest (Jensen and Meckling, 1976; Fama and Jensen, 1983; Nguyen, 2011; and Wang *et al.*, 2015). Wang *et al.* (2015) argue that firms' downside risk decreases when managerial ownership increases because as managers' ownership rise they (managers) become more mindful of firms' risk and thus act more conservatively. Nonetheless, corporate governance anticipates some level of risk-taking for optimal shareholders' wealth maximization; notwithstanding that, excessive risk-taking requires good corporate governance to restrain managerial abuse (Laeven and Levine, 2009; Iannotta *et al.*, 2013; Ararat *et al.*, 2017; and Banerjee and Gupta, 2017).

Managing firms in the interests of shareholders, particularly in emerging markets, presents distinct complexities and challenges. In particular, the Johannesburg Stock Exchange (JSE) listed firms have been impacted by challenges despite having a robust corporate governance code. For example, South African corporate governance codes are believed to be among the world's best codes in terms of compliance rate. Nonetheless, the high compliance rate seems not to have checked corporate governance malfeasance as firms have been found indulging in serious contravention that risked their going concern. The case of Steinhoff International Holding financial statement manipulation that culminated in the loss of over 10 billion euro of shareholders' values within a space of 48 hours in 2017 (Rossouw, 2017; and Skae, 2018), once more casts light on the extent to which governance codes can be said to be achieving their intended purpose.

Generally, there are limited studies that address accounting issues related to developing countries. Aside from the issue of inconclusive results in this respect, the studies that have examined corporate governance and firm performance within South African context have mostly focused on board independence and performance (Ntim, 2011 and 2015; Meyer and

de Wet, 2013; Harvey *et al.*, 2015; and Muchemwa *et al.*, 2016). In specific, Ntim (2015) found a positive relationship between board diversity and market valuation, suggesting the South African stock market values ethnic and gender diversity within organizational boards. The findings of Ntim are explained to suggest that ethnic and gender diversity enhance board independence, monitoring, and decision making which lead to value creation. There are not many studies that examine the impact of experience as a key corporate governance attribute on risk behavior and going concern. This gap is what the present study seeks to address.

This study addresses corporate governance and risk-taking behavior of firms in an emerging market, in departure from prior studies (Nguyen, 2011; Ntim, 2011 and 2015; Koerniadi *et al.*, 2014; Wang *et al.*, 2015; and Chakraborty *et al.*, 2018), which have examined corporate governance attributes generally (and in South Africa specifically) with little focus on the impact experience can have on risk-taking and going concern. Specifically, the present paper examines the impact of experience on risk-taking and going concern on the one hand, and the influence of risk-taking on the going concern on the other hand. To test the impact of experience on firm performance in the South African context is unique as the South African Kings IV report requires experienced individuals to be appointed to boards; it emphasizes that experience must be relevantly combined with financial expertise. Hence, understanding how experience as a critical corporate governance attribute impacts risk-taking and going concern is pertinent, especially for an emerging market such as South Africa. The paper studies corporate governance attributes (mainly experience) using data of South African firms, which is pertinent to understanding emerging economies and capital markets. Thus, the study has the potential to advance knowledge on governance attributes with regard to risk-taking and going concern in emerging economies.

To evaluate the role of experience in risk-taking and going concern, a matrix of corporate governance attributes is used to construct the experience and going concern variables. In determining experience, the paper uses the age of board members, time spent on the board as well as relevant job and professional qualifications of board members. While the paper operationalized going concern as a financial metric that explains a firm's ability to survive in the foreseeable future, consistent with the 'going concern' principle, the paper also employed the three parameters of solvency, profitability, and liquidity as prescribed by International Accounting Standard (IAS) 1 and the International Standard on Auditing (ISA) 570.<sup>1</sup> Going concern in the spirit of the standard refers to the ability of a firm to exist for the next financial year. ISA 570 mandates auditors to flag these issues and where that is the case ISA 700 "Forming an Opinion and Reporting on Financial Statement" envisages the escalation of the noted going concern issues. Literature documents that companies on which going concern opinion has been expressed generally face performance issues thereafter (Bhimani *et al.*, 2009). Common in the literature on performance in relation to going concern are

<sup>1</sup> The IAS 1 and ISA 570 are both issued by the International Federation of Accountants (IFAC) through the International Accounting Standard Board (IASB) and International Auditing and Assurance Standards Board (IAASB) respectively.

financial measures such as Return on Assets (ROA) and Return on Equity (ROE), Tobin's Q and stock market returns (Liu *et al.*, 2012; Leung and Cheng, 2013; and Sarpong-Danquah *et al.*, 2018). Accrual accounting basis of financial reporting has shown that while these measures seem strong indicators, a business may still encounter a going concern problem under certain instances.

The paper is structured as follows: it provides a brief background of the South African corporate governance environment, followed by a review of the related literature, theoretical framework and outline of the testable hypotheses. Subsequently, the method and variables employed in the analysis are explained, followed by the empirical results and post-estimation diagnostics and robustness. Finally, the conclusion is offered.

## South African Governance Context

In South Africa, the frameworks of corporate governance are both internal and external. The external corporate governance pertains to the regulatory function of protecting both public and other interests in firms (Rossouw *et al.*, 2002). The key players in the external framework are the South African Reserve Bank (SARB), JSE, Department of Trade and Industry (DTI), Registrar of Companies, and the Financial Services Board (FSB). The internal corporate governance deals solely with the internal regulatory environment of companies and is predicated on the various governance codes such as the King's codes, the Companies Act of South Africa, Insider Trading Act, the listing requirements of JSE, among others.

The King's Codes on Corporate Governance dominate this part with four codes (King I-IV) having been in effect since 1994. The codes compare with those of the UK and the USA in many respects in terms of principles and applications. With regard to structure, the King's Codes have remained the same with each addition being strengthened to cope with changing business environment and ensure that firms are more responsive and transparent in their dealings. King IV is the most recent and still remains a set of leading practices and voluntary principles expected to apply to every organization irrespective of its form of incorporation. It is outcome-oriented and links expected practices and principles to the outcome desired while replacing the 'apply or explain' compliance and enforcement regime of King III with 'apply and explain'. The code makes substantial emphasis on the experience of board members both in terms of professional qualifications and those relevant to the business operations and management. Considered of utmost importance under Principle 7 (Composition of the Governing Body) of King IV Report is the concern for adequate knowledge, skill, experience, diversity and independence of board members in the discharge of their governance role and responsibilities (The Institute of Directors Southern Africa, 2016).

A peculiarity of the South African code of corporate governance stems from the fact that while it has a unitary board composition, it tends to support a two-tiered governance structure (Doni and Fortuna, 2018). This permits firms listed in South Africa and perhaps in other jurisdictions like Europe that favor the two-tier governance structure to adopt the same mechanism. Hence, the debate as to whether the drawback of the two-tier supervisory board not being in the loop of the activities of the management board to the extent that such

could result in major governance infractions as the case of the Steinhoff is now a front-burner issue. Besides, South Africa is at the forefront of many emerging markets having their corporate governance codes constantly reviewed as well as in implementation and enforcement (African Corporate Governance Network, 2016). Not only that, the JSE, apart from being in the lead in Sub-Saharan Africa, is one of the top 20 global exchanges in terms of turnover and capitalization, with South Africa having one of the largest equity markets in the world (*African Business Magazine*, 2015; and African Corporate Governance Network, 2016). Taken together, the South African context provides the requisite indices for the choice of an emerging market in the study of board experience as an attribute of corporate governance in relation to risk and going concern.

## Literature Review

A handful of empirical studies have been done globally and in South Africa to examine the association of corporate governance attributes and firms' performance without considering board experience. Attributes such as directors' independence, board size, female directorship, CEO duality, internal equity ownership, among others, have been found to be related to firms' risk-taking and performance (Nguyen, 2011; Koerniadi *et al.*, 2014; Wang *et al.*, 2015; Chakraborty *et al.*, 2018; and Koirala *et al.*, 2018). In particular, Chakraborty *et al.* (2018) examine the impact of corporate governance attributes on risk-taking of Canadian companies and find idiosyncratically that institutional shareholdings, environmental, social and governance disclosure and family control are the corporate governance attributes that affect risk in Canadian firms. Focusing on Indian firms as an illustration of an emerging market, Koirala *et al.* (2018) investigate whether stricter corporate governance reform impacts risk-taking and find that reforms that expand the financial and criminal penalties of managers are able to mitigate investment conservatism and encourage value-enhancing investment. Taking into account the fact that emerging markets have weaker market forces on corporate scrutiny with greater insider ownership, Koirala *et al.* argue that the substitutive effect of stricter corporate governance reforms could alter insider utility trade-off to pursue corporate risks with value-enhancing benefits for shareholders.

In terms of the nature of firms, Elamer *et al.* (2018) explore corporate governance and risk-taking in the UK insurance industry and found mixed results in terms of the nature of corporate governance attributes. While they found board size and board meeting to reduce risk-taking, board independence and the size of the audit committee do not explain insurance firm's risk-taking behavior. Meanwhile, Zalata *et al.* (2018) investigate the effect that the gender of a CEO has on earnings management using classification shifting as a measure of earnings management and find female CEOs to be more risk-averse than their male counterparts, but are not necessarily more ethical than male.

Different performance measures have been adopted in the literature relating corporate governance attributes to firms performance and/or value. Black (2001) found that firms with better corporate governance value outperform those with weak corporate governance in terms of market value. In a related study, Black *et al.* (2006a) argue that corporate governance is a causal factor for explaining firms market value in Korea as board independence favors

better market values. Furthermore, Black *et al.* (2006b) note an association between firm-level governance attributes and market value, although with large differences in coefficient and significance. Sarpong-Danquah *et al.* (2018) report a positive relationship between board independence, gender diversity and performance, with however no significant relationship between board size and performance measure for manufacturing firms in Ghana. Assessing firm value and corporate governance relationship in China, Liu *et al.* (2012) show that state-owned companies were able to mitigate financial constraint during the 2007-2009 crisis akin to good corporate governance. They also find that ownership concentration mitigates financial constraints as managerial ownership is positively associated with the crisis-period performance of SOEs. Similarly, Leung and Cheng (2013) examine the influence of corporate governance mechanisms on the value of central State-Controlled Listed Firms (SCLFs) and local SCLFs and document that aggregate ownership by large shareholders and remuneration of top executives exhibit different effects on firm value in central and local SCLFs. Ammann *et al.* (2011) provide international evidence suggesting a strong and positive relation between firm-level corporate governance and valuation. Claessens and Yurtoglu (2013) in a review of published articles on corporate governance conclude that better corporate governance benefits firms through greater access to finance, lower cost of capital, improved performance and more favorable treatment of all stakeholders. Francis *et al.* (2012) argue that traditional board independence does not significantly affect firm performance; strong board independence, in terms of outside directors with less connect with the chief executive officer, was significantly positive to influence performance and that firm performance during a crisis is a function of firm-level differences in corporate boards.

In terms of South African studies, Ntim and Osei (2011) find the frequency of corporate board meetings to be positively related to corporate performance. This finding is substantiated in Ntim (2013) with corporate governance surrogated by corporate governance index that positively influenced firm performance. Ntim (2012) also finds a strong positive link between the dual board leadership structure and firms' market value in South Africa. Several other studies on corporate governance and firm performance in South Africa either reaffirm or refute this position (Meyer and de Wet, 2013; Waweru, 2014; Jonty and Mokoteli, 2015; Mans-Kemp and Viviers, 2015; Taljaard *et al.*, 2015; and Muchemwa *et al.*, 2016).

## Theoretical Framework and Hypothesis Development

The paper builds the theoretical framework leveraging on the complementarity of agency (Jensen and Meckling, 1976; and Lipton and Lorsch, 1992), stakeholder (Cooper and Owen, 2007), resource-dependent (Pfeffer, 1972; Low *et al.*, 2015; and Ntim, 2015), and stewardship (Donaldson and Davis, 1991; and Schoorman and Donaldson, 1997) theories to explain the influence of experience on risk-taking and the implication for firm's going concern prospects. Corporate governance is rooted in the agency theory that describes the contractual relationship between the principal (owners) and the agent (directors, having fiduciary responsibilities to manage the business entrusted to them in the best interest of the principal), and the potential conflicts that may arise between them. Hence, there is a struggle of interest alignment between the two parties. Arguably, a mutual relationship, according to Kiefer *et al.* (2017),

is envisaged between them but the directors are often self-serving, to the detriment of the owners (La Porta *et al.*, 2000). Shareholders often incur costs to adopt several measures to check the actions of managers such as board independence (Kim *et al.*, 2013), or share options as prescribed in the South African Companies Act No. 71 2008 (Parliament of the Republic of South Africa, 2008) for interest alignment. The extant literature suggests that agency theory seeks to work out an alignment of agents and principal's interest via governance mechanisms which mitigates risky behavior of managers with economic implication for firm performance.

As noted by Balachandran and Faff (2015), one of the main arguments offered for the impact of corporate governance on firm value (e.g., Beiner *et al.*, 2006) is due to its ability to resolve the agency conflict by minimizing uncertainties regarding future cash flow and cost of capital (Hafsi and Turgut, 2013), thus emphasizing the role of internal corporate governance in deploying firms' resources for owners' value maximization (Rebeiz, 2015), and essentially suggesting that in the absence of a sound internal corporate governance mechanism, managers will seek their interests above those of shareholders, which often reflects in their risk-taking behavior, posing a threat to the organization's survival. Going beyond just the shareholder's interests is the stakeholders' model that seeks to ensure that corporations are more socially responsible with the overarching objective of maximizing the welfare of a wider constituency of companies' stakeholders. This is consistent with the evolving South African's King's Code of corporate governance with the King IV devolving from the traditional shareholders' model to stakeholders' model. The underlying proposition of the stakeholders' theory is to judge the performance of firms based on the wider stakeholders' interest in firm's financial performance, employment, market shares, including trading relations with suppliers and customers, among others. In South Africa, both the Companies Act and the King IV provide a framework for the empowerment of stakeholders. While the former provides for companies to operate for the enhancement of shareholders' profits and societal welfare, the latter compels the board to adopt a stakeholder-inclusive approach that ensures stakeholders' interests and that their needs and expectations are balanced over time in the organization's best interests. Overall, both the agency and the stakeholders' models seek to ensure the proper management and sustainability of the corporations.

In factoring the structure of boards, the resource dependence theory considers vital features such as experience, knowledge and expertise as critical assets of firms that are capable of influencing performance, given their potential to harness requisite resources needed by the firms (Haniffa and Cooke, 2002; Ntim, 2011; and Nguyen *et al.*, 2015). Ntim (2015) explains that based on the resource dependence theory assumption, firms could access benefits from having diversified board in terms of market valuation (i.e., by linking such organizations to its external environment to secure critical resources) and provide link to consumers and communities, improve its opportunities, reputation and value (Pfeffer, 1972; Hafsi and Turgut, 2013; Low *et al.*, 2015; Nguyen *et al.*, 2015; and Rebeiz, 2015). Overall, the ability of boards to utilize their capabilities to mobilize resources through integrated board's composition covering different constituencies and stakeholders leads to improved performance.

Stewardship theory views management as servants whose main motivation is deploying requisite resources to make decisions that optimize owners' financial position. Stewardship theorists argue that managers are inherently trusted and unswerving, therefore maximum authority should be weaned to them for improved performance given their knowledge of the business (Schoorman and Donaldson, 1997; Nicholson and Kiel, 2007; and Rebeiz, 2015). Schoorman and Donaldson (1997) suggest that stewardship theory is premised on defined relationships that align manager's interest with that of the principal. Also, since managers are not motivated by individual goals, but rather are stewards whose interest is aligned with the objectives of their principals, they tend to deliver improved value to the stakeholders. In some respect, the stewardship theory advocates concentration on a single person because absolute power in one leadership structure portends a superior performance. Thus, scholars like Donaldson (1990) envisage a corporate governance environment under the stewardship theory that managers work solely for shareholders' return maximization. Overall, these theories concur that good corporate governance practice results in better organizational management and improved performance in the interests of owners.

Consequently, a well-functioning corporate governance system epitomizes an efficient and effective internal and external operation that enables companies to seek and obtain a strategic advantage. Put differently, good corporate governance practices enhance agent's monitoring, resulting in improved performance (Balachandran and Faff, 2015; Low *et al.*, 2015; Ntim, 2015; and Rebeiz, 2015). In specific, Balachandran and Faff (2015) assert that corporate governance facilitates timely information and transparency in financial reporting, as well as appropriately holds top corporate managers to account for their (in)actions, especially in the case of non-compliance with regulatory requirements. Essentially, these expectations are embedded in the need for growth and expansion of the corporation via an actualization of corporate goals. Furthermore, a functional corporate governance framework should possess a number of features encompassing board's experience as prescribed in King IV Code. Specifically, the King Codes I-IV highlight attributes of experience, knowledge, skills, and expertise generally with a broader spectrum of appropriate diversity. The Codes effectively require boards of South African firms to be composed of adequate size and diversity such that the skills in terms of profession, occupation, and experience that are relevant to the firms are well constituted. Additionally, in line with these Codes, audit committees are collectively expected to possess appropriate skills and expertise to understand the financial and risk management reporting approach for their firms. The particular emphasis on skills on the board no doubt highlights the importance of experience and its impact on firm performance. Aldamen *et al.* (2012) show that experience of audit committee chair was vital for corporate success during exogenous shocks such as the global financial crisis. They note the existence of a positive relationship between firm performance and a combination of knowledge and experience.

Our argument, building on the literature and theories highlighted above, is that the presence of good corporate governance should result in improved firm performance, particularly if the board experience constitutes a major trait for assessing firm's corporate



governance attribute. Consistent with prior literature and the above discussion, the postulation, therefore, is that boards with more experienced members would have more effect on a company's performance, all else unchanged. Thus, the first hypothesis is, *ceteris paribus*:

*H<sub>1</sub>: Board experience enhancing attribute of corporate governance has a positive influence in predicting firms' corporate risk-taking and going concern prospects.*

Considering the fact that boards are expected to make decisions concerning risks for wealth maximization of their firms, which could be abused via excessive risky investments or less conservative investments especially in the absence of a strong monitoring mechanism or poorly executed strategic decision, their risk-taking activities could threaten their survival. Hence, in connection with the first hypothesis, we postulate that risk-taking activities of the sampled firms will have consequences on the ability of the firms to survive in the foreseeable future. Therefore, we propose our second hypothesis as:

*H<sub>2</sub>: Corporate risk-taking is costly for firms' going concern prospects.*

## Data and Methodology

This study employed cross-sectional data to analyze the impact of board experience on risk-taking and going concern, as well as the impact of risk-taking on going concern using Bayes' multivariate regression approach. Bayes is very important in understanding the phenomenon under observation. In specific, Bayes' assumption is premised on the fact that the more knowledge we have about a subject, the more equipped we are to make an informed judgment and decision. The model parameters are based on random quantities which have a posterior distribution formed by combining prior knowledge about parameters with the evidence from the observed data sample (i.e., the density of data given prior knowledge of the data).

Thus, a more knowledgeable board is better resourced to make an insightful decision that affects the future of a firm. This underscores the unequivocal demand on the board for relevant experience and expertise to guarantee success for the firm in the near future. Critiques of the Bayesian model have questioned its subjectivity in prior distribution selection as well as its computational complexity. However, in this case, we argue that Bayes' ability to incorporate prior information into models supports its capabilities to outperform the Maximum Likelihood Estimation (MLE) and makes it an ideal choice for this study. In addition, the Bayesian model does not rely on asymptotic normality which is the case with MLE and works effectively with a small sample such that intuitive results interpretation can be easily made. In other words, the Bayes' approach is robust to outliers and missing data, particularly in the outcome variables. More importantly, this method is adopted given the non-data persistent criticism of cross-sectional data analysis and its weakness in analyzing firm-level data that would perhaps have cast doubt on the reported results in this study. The implication for this study is that even with limited and (in some instances incomplete) data, this technique is able to produce better and reliable results that allow us to make a decision regarding policies on corporate governance (Grzenda, 2015).

In this study, the standard Bayesian multivariate regression model following Sinay and Hsu (2014) with a functional form relationship is used:

$$Y = X\beta + \epsilon$$

where  $Y$  is the  $(n \times p)$  matrix of the explained variables,  $X$  represents the  $(n \times k)$  matrix of independent variables,  $\beta$  is the  $(k \times p)$  matrix of regression coefficients to be estimated and denotes the matrix of random errors.

The limitation of the functional forms of the multivariate regression stated above is that most statistical inference in the field of finance is driven by probability models relating to observed data,  $y_i$  to unknown parameters,  $\lambda$ . This simple approach involves modeling normal data, say,  $y_i \sim N(\mu, \sigma^2)$  such that  $i = 1, \dots, k$ . Hence, the related regression model follows by replacing  $\mu$  with  $X\beta$ . Thus, the probability model can be written as  $y \sim f(y | \lambda)$ , implying that once the parameter is known the data about economic agents' behavior could be inferred, thereby lacking real world application and making the model unrealistic. To overcome this challenge, the Bayesian inference approach takes the estimated parameter,  $\hat{\lambda}$ , as fixed, conditional on the observed data,  $y$ . The Bayes' proposition states that parameters are not a true representation of data; therefore, the parameter is fixed while observed data is random. Thus, there is the latitude to update ones believe and judgment about certain phenomenon as new information emerges on an economic agent, i.e., the more knowledge an individual gains about an issue the better the decisions they will be able to make. Where a parameter  $\lambda$  is considered and a set of observed data,  $y$ , then the Bayesian approach considers the probability of parameter,  $\lambda$ , given the set of data available,  $y$ , to be  $p(\lambda | y)$ .

Hence, the focus is on computing the posterior distribution of the unknown parameter  $\lambda$  given the observed data  $y$ .

$$p(\lambda | y) = \frac{p(y | \lambda)p(\lambda)}{p(y)} \times p(y | \lambda)p(\lambda)$$

This model is known as the Bayesian approach, and  $p(y)$  is the prior distribution and the likelihood  $p(y | \lambda)$  is written as:

$$p(y | \lambda) = \prod_{i=1}^k p(y_i | \lambda)$$

Based on the model selection criteria, the prior for this study regression model parameter is a multivariate normal distribution given by:

$$\beta \sim N(b_0, \epsilon_0^2)$$

The dependent variable,  $Y$ , represents going concern in firm proxied by accounting ratio to be estimated based on the requirements of International Financial Reporting Standard

(IFRS), IAS 1 and the International Standard on Auditing, ISA 570 – prescribe basis of going concern assumption assessment on the source of finance, future profitability, and debt repayment. Appropriate ratio selection based on these three parameters will be employed in line with the extant literature (Bhimani *et al.*, 2009) and data availability. Corporate risk also forms part of the dependent variables in testing  $H_2$ . Also, the dependent variables,  $X$ , are our experience proxies, age, Time Spent on the Board (*TSD*), Qualification (*QUAL*) and Financial Qualification (*FQUAL*) following (Bloom *et al.*, 2001) measures for experience index.

### Variable Measurement and Data

Table 1 shows the summary statistics of the variables employed in the study and their associated data. We hand-collected data relating to the educational and professional qualification of board members from the investors' relations section of each firm's website, while all other data were obtained from the Bloomberg database. The point for the cross-section data was precedent on the variables, *TSD* and directors' age that are not time series data, which were taken from the 2017-18 financial year been the latest financial statement. Bloomberg database provides the average age of directors and the *TSD*. To determine the data to be collected for performance and corporate risk variables, the study assumed the average performance of the firms over the last five years up to 2017-18 financial year as a fair representation of the current board performance, with average *TSD* in Table 1 suggesting

| Variable  | N   | Unique Firms | Mean  | SD      | Min      | Max      |
|-----------|-----|--------------|-------|---------|----------|----------|
| AGE       | 264 | 33           | 56.29 | 5.36    | 38.00    | 72.00    |
| TSD       | 264 | 230          | 6.27  | 3.10    | 0.76     | 17.81    |
| QUAL      | 235 | 92           | 8.03  | 0.51    | 6.33     | 10.29    |
| FQUAL     | 235 | 69           | 0.62  | 2.01    | 0.00     | 28.60    |
| ROE       | 268 | 268          | 13.92 | 28.52   | -233.67  | 88.01    |
| ROA       | 268 | 268          | 6.37  | 10.77   | -81.10   | 43.09    |
| PROFM     | 268 | 268          | 97.96 | 1455.59 | -1494.89 | 23696.51 |
| CASHRATIO | 268 | 264          | 3.01  | 17.45   | 0.00     | 221.71   |
| QR        | 256 | 254          | 4.89  | 14.53   | -0.45    | 143.38   |
| CR        | 268 | 268          | 3.13  | 16.44   | 0.00     | 182.22   |
| DR        | 268 | 266          | 0.48  | 0.20    | 0.00     | 0.99     |
| FCFCL     | 268 | 266          | 25.44 | 214.17  | -12.86   | 2669.52  |
| DCR       | 268 | 251          | 0.12  | 0.12    | 0.00     | 0.67     |
| CORPRISK  | 268 | 268          | 6.05  | 8.91    | 0.02     | 87.48    |

**Note:** All variables are described in the Appendix in Table A1.

that the current board has spent an average of six years. The sample comprised all the JSE firms; however, only 268 firms have available data for the variables of interest on their websites, from which the data for the study was collected.

The variables are divided into three categories as described in our models representing experience, corporate risk, and going concern. Experience variable comprises age, TSD, and directors' expertise in terms of academic and professional qualification following Bloom *et al.* (2001). We argue that since experience is likely to increase with age, education, on the job training and life encounters, the cumulative experience of boards will make a difference to the decision-making choices of the firms. The variable, TSD is consistent with the length accumulated by each director while serving on the corporate board. This we expect to enhance the individual director's potential to make active and meaningful contributions to the business of the firms in terms of informed decision making. Data on these two variables were provided as an average of the total directors in terms of age and total time spent by the directors. We measure the director's qualification based on the South African Qualification Authority (SAQA)'s ranking of educational qualification rating document (South African Qualifications Authority, 2001). Each director's qualifications as contained on the websites of the firms were ranked and averaged over the number of total directors to provide a data point for each firm. For instance, Table 1 shows the maximum qualification to be approximately 10 which is a qualification equivalent to a Doctoral criterion and an approximate of 6 as the minimum, signifying an advanced diploma. We assume that having high education attainment should increase expertise inherent with experience and as shown in the table, the mean qualifications on the companies' boards is at Honors (8) as substantiated by the standard deviation (0.51) that is not fundamentally different from the mean. For professional qualification, we considered the number of directors with accounting/finance qualifications such as CA (SA), CFA, ACCA, CIMA, among others, as a percentage of the total board members.

Following Stulz (2015) and Banerjee and Gupta (2017), we conceptualize corporate risk-taking in terms of risky investment measured as the firm-specific ROA volatility from market adjusted ROA (i.e., sampled firms average ROA). The procedure is to take the standard deviation from the adjusted market ROA and square to eliminate negative values and then take the square root. As initially indicated, our going concern variables follow the three constructs of profitability, liquidity, and solvency, bordering on the ability to make a future profit, repay debts and access finance. ROE and Profit Margin (PROFM) both representing accounting ratio surrogating profitability were employed. Meanwhile, to capture future profitability, we estimated the forward lag of this variable by one year to be consistent with the going concern assumptions. For liquidity, cash ratio (cash plus marketable securities divided by current liabilities), quick ratio (current assets less inventory divided by current liabilities), current ratio (current assets divided by current liabilities), and free cash flow to current liabilities are employed to measure the ability of a firm to sustain current and future repayments as used in literature. Furthermore, we measure debt based on debt to capital ratio and debt ratio which are total debt divided by total capital and total liabilities divided by total assets respectively. The going concern variables were averaged for each firm over

the last five years (i.e., from 2013-14 to 2017-18 financial years) which we consider a fair representation of the current directors on the board as the mean of the TSD fairly indicated (Table 1). It is noteworthy that we followed literature to select these measures; the variables that finally made it as input to the process were ultimately determined by model acceptability in terms of the overall efficiency as will be discussed later in the paper.

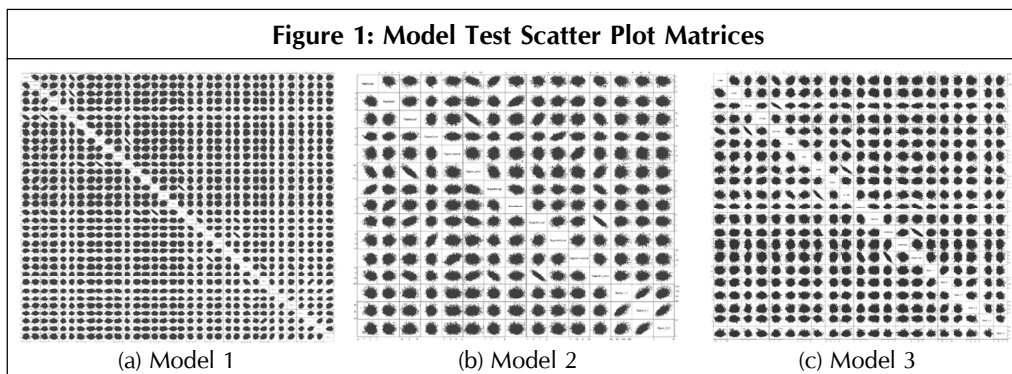
## Results and Discussion

The empirical estimation begins with our three model selection criteria using Deviance Information Criteria (DIC), Bayesian Model Test (BMT) and scatter plot matrices reported in Table 2 and Figure 1 respectively. As a rule, a small and absolute value of DIC is better suggesting an appropriate fit for our model. The DIC favors the selection of multivariate analysis (full models). The rule is the model corresponding to the smallest DIC should be selected. In the Bayesian model, the BMT is also used for model selection which describes the probability of the model fitting into the data, i.e., the model with the highest probability is preferred. In the case of our models, the full model is found to be the most acceptable in favor of multivariate analysis, Model 1.

The same could not be said of the second and third models though with slightly mixed results; thus the need for the further assessment using the scatter plot matrices.

| Table 2: Test Models for Selection – Deviance Information Criteria |                |                   |                   |               |                |               |                |                |                  |
|--|----------------|-------------------|-------------------|---------------|----------------|---------------|----------------|----------------|------------------|
| DIC  | Model 1        |                   | Model 2           |               |                |               | Model 3        |                |                  |
|  | <i>FLAGROE</i> | <i>FLAG PROFM</i> | <i>CASH RATIO</i> | <i>QR</i>     | <i>CR</i>      | <i>FCFCL</i>  | <i>DCR</i>     | <i>DR</i>      | <i>CORP RISK</i> |
| <i>AGE</i>   | 2516.37        | 2516.37           | 2032.12           | 758.56        | 2234.45        | 958.57        | -362.08        | -95.70         | 1854.08          |
| <i>TSD</i>   | 2514.66        | 2514.66           | 2032.16           | 752.46        | 2233.98        | 956.61        | -360.17        | -96.28         | 1853.36          |
| <i>QUAL</i>  | 2263.64        | 2263.64           | 2263.64           | 679.11        | 2015.11        | 853.12        | -297.11        | -84.71         | 1700.23          |
| <i>FQUAL</i>   | 2263.94        | 2263.94           | 2046.21           | 678.66        | 2015.21        | 855.59        | -298.79        | -78.68         | 1700.74          |
| <i>CORP RISK</i>   | 2552.00        | 1286.84           | 2263.66           | 765.66        | 2266.16        | 969.24        |                |                |                  |
| Full   | <b>2222.74</b> | <b>1110.86</b>    | <b>1808.16</b>    | <b>666.38</b> | <b>1977.10</b> | <b>844.98</b> | <b>-296.50</b> | <b>-296.67</b> | <b>1615.41</b>   |
| <b>BMT</b>   | <b>P(M y)</b>  | <b>P(M y)</b>     | <b>P(M y)</b>     | <b>P(M y)</b> | <b>P(M y)</b>  | <b>P(M y)</b> | <b>P(M y)</b>  | <b>P(M y)</b>  | <b>P(M y)</b>    |
| <i>AGE</i>   | 0.00           | 0.00              | 0.00              | 0.00          | 0.00           | 0.00          | 0.60           | 0.00           | 0.00             |
| <i>TSD</i>   | 0.00           | 0.00              | 0.00              | 0.00          | 0.00           | 0.00          | 0.40           | 0.00           | 0.00             |
| <i>QUAL</i>  | 0.00           | 0.00              | 0.00              | 0.77          | 0.50           | 0.93          | 0.00           | 0.00           | 0.00             |
| <i>FQUAL</i>   | 0.00           | 0.00              | 0.00              | 0.23          | 0.12           | 0.07          | 0.00           | 0.00           | 0.00             |
| <i>CORP RISK</i>   | 0.00           | 0.00              | 0.00              | 0.00          | 0.00           | 0.00          |                |                |                  |
| Full   | <b>1.00</b>    | <b>1.00</b>       | <b>1.00</b>       | 0.00          | 0.37           | 0.00          | 0.00           | <b>1.00</b>    | <b>1.00</b>      |

**Figure 1: Model Test Scatter Plot Matrices**



For an unbiased decision, we have to take recourse to the scatter plot matrices in Figure 1. A close observation of the pattern correlation between qualification and constant among the various models immediately suggests the need for multivariate analysis. Hence, we could conclude that a majority of the model tests criteria provide overwhelming evidence to support a full model. Moreover, the presence of correlation, as indicated by the scatter plot matrices among few of the relationships in Figure 1, proposes the adoption of multivariate prior that allows for correlation among parameters in a model such that multiple parameters are accounted for simultaneously with correlation among them.

Looking at the different measures of experience in relation to corporate risk-taking and going concern in Table 3, we note that while a majority of our results support our first hypothesis that experience impacts corporate risk-taking positively and thus improves firms' going concern prospects, a number of the results suggest the reverse—that experience increases risk-taking and may likely worsen firms' chances of survival. Our interpretation of the signs of the estimates with respect to experience and future profitability meant that a positive (+) sign increases future profitability and hence enhances going concern and the opposite subsists for a negative (–) sign. According to Table 3, firstly, experience variables, age (*AGE*), time spent on the board (*TSD*), qualification (*QUAL*) and professional qualification (*FQUAL*), have 13%, 91%, 63% and 1% probabilities of increasing future return on equity (*FLAGROE*) respectively. Similarly, except for *FQUAL* that has 7% chance of reducing future profit margin (*FLAGPROFM*), the probabilities of *AGE*, *TSD* and *QUAL* increasing *FLAGPROFM* are 4%, 3% and 75% with all the parameters falling within the lower and upper limits of the 95% credible interval (see Table 6 for parameter test results). Taken together, we have

**Table 3: Model Results**

|         | Variable         | <i>AGE</i> | <i>TSD</i> | <i>QUAL</i> | <i>FQUAL</i> | <i>CORPRISK</i> | Cons.   |
|---------|------------------|------------|------------|-------------|--------------|-----------------|---------|
| Model 1 | <i>FLAGROE</i>   | 0.130      | 0.906      | 0.628       | 0.012        | –0.257          | –2.863  |
|         | Lower            | –0.615     | –0.464     | –6.506      | –1.916       | –0.752          | –69.922 |
|         | Upper            | 0.830      | 2.388      | 7.701       | 1.969        | 0.266           | 71.272  |
|         | <i>FLAGPROFM</i> | 0.037      | 0.026      | 0.750       | –0.069       | –0.040          | –5.650  |
|         | Lower            | –0.027     | –0.101     | 0.079       | –0.241       | –0.081          | –12.297 |
|         | Upper            | 0.102      | 0.146      | 1.405       | 0.104        | 0.001           | 1.068   |

Table 3 (Cont.)

|  | Variable  | AGE     | TSD     | QUAL    | FQUAL   | CORPRISK | Cons.   |
|--|-----------|---------|---------|---------|---------|----------|---------|
| Model 2  | CASHRATIO | -0.123  | -0.056  | -1.012  | 0.019   | 0.028    | 17.205  |
|  | Lower     | -0.428  | -0.569  | -4.020  | -0.757  | -0.168   | -13.953 |
|  | Upper     | 0.174   | 0.490   | 2.111   | 0.750   | 0.212    | 46.937  |
|  | QR        | -0.008  | -0.064  | -0.105  | 0.022   | -0.011   | 3.001   |
|  | Lower     | -0.035  | -0.111  | -0.387  | -0.047  | -0.028   | 0.108   |
|  | Upper     | 0.020   | -0.012  | 0.185   | 0.088   | 0.006    | 5.897   |
|  | CR        | 0.407   | -1.001  | 0.971   | -0.058  | -0.040   | -20.716 |
|  | Lower     | -0.006  | -1.824  | -3.625  | -1.213  | -0.334   | -65.976 |
|  | Upper     | 0.823   | -0.238  | 5.380   | 1.117   | 0.263    | 25.569  |
|  | FCFCL     | 0.008   | 0.027   | 0.295   | 0.037   | 0.007    | -2.780  |
|  | Lower     | -0.021  | -0.033  | -0.031  | -0.047  | -0.015   | -5.922  |
|  | Upper     | 0.041   | 0.087   | 0.631   | 0.113   | 0.029    | 0.443   |
| Model 3  | DCR       | -0.0010 | -0.0003 | -0.0023 | -0.0056 |          | 0.205   |
|  | Lower     | -0.004  | -0.006  | -0.037  | -0.014  |          | -0.096  |
|  | Upper     | 0.002   | 0.006   | 0.029   | 0.002   |          | 0.538   |
|  | DR        | 0.0003  | 0.0063  | 0.0667  | -0.0033 |          | -0.111  |
|  | Lower     | -0.004  | -0.003  | 0.016   | -0.017  |          | -0.636  |
|  | Upper     | 0.005   | 0.016   | 0.117   | 0.010   |          | 0.395   |
|  | CORPRISK  | -0.006  | -0.110  | -0.675  | -0.211  |          | 12.391  |
|  | Lower     | -0.188  | -0.463  | -2.741  | -0.719  |          | -8.742  |
| Upper  | 0.199     | 0.228   | 1.513   | 0.301   |         | 33.660   |         |
| <b>Note:</b> MCMC iterations = 12,500; Burn-in = 2,500; MCMC sample size = 10,000; Model 1 (Number of obs = 230; Acceptance rate = 0.2608; min efficiency = 0.00601; avg efficiency = 0.02725; max efficiency = 0.08456; Log marginal likelihood = -1693.0549); Model 2 (Number of obs = 220; Acceptance rate = 0.276; min efficiency = 0.005974; avg efficiency = 0.02137; max efficiency = 0.05348; Log marginal likelihood = -2627.5764); Model 3 (Number of obs = 230; Acceptance rate = 0.2432; min efficiency = 0.01594; avg efficiency = 0.037; max = 0.06393; Log marginal likelihood = -724.83785). |           |         |         |         |         |          |         |

compelling evidence to conclude that experience impacts the future profitability of firms and also helps their survival into the near future (i.e., going concern). This result provides support for the first hypothesis ( $H_1$ ) and is consistent with prior studies (Bhagat and Bolton, 2008; Balasubramanian *et al.*, 2010; Ammann *et al.*, 2011; Sami *et al.*, 2011; and Waweru, 2014) on other corporate governance attributes' impact on performance. In terms of corporate risk-taking (*CORPRISK*) and going concern, the evidence suggests that excessive risk-taking may be detrimental to going concern as *CORPRISK* has 26% and 4% probabilities of reducing *FLAGROE* and *FLAGPROFM* respectively. Essentially, our results align with the theorization of Jensen and Meckling (1976) and Fama and Jensen (1983) that excessive risk-taking may

put shareholders' interests at risk and thus validate our second hypothesis ( $H_2$ ) that corporate risk-taking could put firms' going concern prospects at jeopardy.

Secondly, experience and going concern in Model 2 in Table 3 show mixed results. Here we measure going concern based on firms' liquid assets that explain their ability to finance their operating activities and settle obligations as they fall due—which is a major determinant of access to finance and supplies. A positive estimate implies the ability of board experience to influence a strong liquid asset base, otherwise the risk of going concern—where the sign is negative, implying an inability to access funds. A staggered interpretation of this model reveals that professional (i.e., accounting or financial) qualification has a general tendency of enhancing firms' liquidity with *FQUAL* having 2%, 2% and 4% probabilities of positive impact on cash ratio (*CASHRATIO*), quick ratio (*QR*) and free cash flow to current liabilities (*FCFCL*). With respect to the current ratio (*CR*), the estimation shows that *FQUAL* has a 6% chance of causing negative influence. The *TSD* seems to exhibit some negative probabilities at 6% on *CASHRATIO*, 6% on *QR* and 100% on *CR*, while it is only positive at 3% on *FCFCL*. Both age and qualification exhibit 50-50 chances on the explained variables with *AGE* having -12%, -1%, 40% and 1% impact on *CASHRATIO*, *QR*, *CR* and *FCFCL* respectively. While *QUAL* has -101%, -10%, 97% and 29% probabilities of influencing *CASHRATIO*, *QR*, *CR* and *FCFCL* respectively. It is not clear why these variables will negatively influence liquidity of firms thereby jeopardizing going concern. However, this may be a further confirmation of the mixed and inconclusive results in corporate governance attributes and performance literature (Klapper and Love, 2004; Babatunde and Olaniran, 2009; and Shank *et al.*, 2013). On the side, corporate risk-taking *CORPRISK* shows positive probabilities at 3% and 1% of enhancing *CASHRATIO* and *FCFCL* and negative probabilities at 1% and 4% of influencing *QR* and *CR* respectively. This suggests a mixed result for the effect of corporate risk-taking on the going concern of the sampled firms. One explanation for this is that managers are required to take moderate and appropriate risks to enhance their firms' value, especially their cash ratio and cash flows (Iannotta *et al.*, 2013; Stulz, 2015; Ararat *et al.*, 2017; and Gupta, 2018). At the same time, if management's appetite for risk becomes excessive, it can jeopardize their firms' going concern prospects as noted in the negative impact on quick ratio and credit ratio (Biddle *et al.*, 2009; and Balachandran and Faff, 2015).

Finally, Model 3 in Table 3 reports the results of experience on debt and risk-taking. We consider positive (+) sign as not good for going concern since an increase in debt increases the possibilities of default. Furthermore, a negative (-) sign for experience estimate on corporate risk indicates experience moderates risk-taking by firms. There is evidence of mixed and weak coefficient for debt measures, i.e., Debt Capital Ratio (*DCR*) and Debt Ratio (*DR*), with experience. In particular, experience exhibits negative influence on *DCR* at -0.1%, -0.03%, -0.23% and -0.56% probabilities for *AGE*, *TSD*, *QUAL* and *FQUAL* respectively, implying that the propensities to undertake more debts decrease marginally as experience accumulates. We found an exception in the case of *DR*, where except for *FQUAL* (-0.33%), *AGE*, *TSD* and *QUAL* show positive influence at 0.03%, 0.63%, and 7% respectively, hence, suggesting the degree of experience influence on the amount of debt



a firm take-on may well depend on the mix of debt measures employed. The extent of debt a firm can undertake is dependent on the benefit from the debt. This is consistent with the capital structure theory in terms of tax relief on debt that makes it a cheaper source of financing notwithstanding the risk of defaulting that is associated with holding too much debt. This may be obvious in the disposition of experience (*AGE* 1% (approx.), *TSD* 11%, *QUAL* 67% and *FQUAL* 21%) having a negative impact on corporate risk-taking. A recent study by Schultz *et al.* (2017) found a relationship between default probability and corporate governance attributes (i.e., executive pay, board structure and ownership structure), although their results are not robust to the use of alternate econometric techniques. Interpreting this result is by no means simple as corporate governance by theory may either increase or reduce risk depending on which side of the divide managements decide to pitch (Jensen and Meckling, 1976; Fama and Jensen, 1983; Laeven and Levine, 2009; and Banerjee and Gupta, 2017). Expectedly and as hypothesized, we found evidence to prove that experience does influence firm's risk-taking behavior, in which case an inverse influence suggests a moderating role.

In some respect, our analysis produced a mixed result, but we prove empirically that experience does influence risk-taking and going concern of firms as well as corporate risk-taking impacts firms' financial performance. Most importantly these results are harnessed for the greater good of corporate governance development for the overall aim of managing firms for the stakeholders. Interestingly, we found qualification, time spent on the board and sometimes age to have great influence in terms of regression coefficients. It suffices to say that having the right training matched to the job is of great importance to firms' success. Likewise, experience on the job which could also come with age cannot be overemphasized. We cannot say less for a professional qualification in accounting and finance, even though with less strength in terms of estimates. For instance, we attempted to predict future performance using *ROE* giving the 10<sup>th</sup> to the 90<sup>th</sup> percentile of experience variables and corporate risk and found that the better the experience variables the more enhanced the going concern of a firm can be (Table 4).

| Table 4: Sampled Predicted Value – Forward Lagged ROE |            |            |             |              |                 |                 |
|---|------------|------------|-------------|--------------|-----------------|-----------------|
| Percentiles   | <i>AGE</i> | <i>TSD</i> | <i>QUAL</i> | <i>FQUAL</i> | <i>CORPRISK</i> | Predicted Value |
| 10%   | 50.00      | 2.51       | 7.40        | 0.20         | 0.72            | 10.69           |
| 25%   | 53.00      | 4.08       | 7.71        | 0.29         | 1.70            | 12.43           |
| 50%   | 56.00      | 5.85       | 8.00        | 0.43         | 3.90            | 13.94           |
| 75%   | 60.00      | 7.79       | 8.29        | 0.57         | 6.80            | 15.65           |
| 90%   | 62.00      | 10.40      | 8.57        | 0.78         | 13.10           | 16.83           |

### Post-Estimation Diagnostics and Robustness

We performed a number of post-estimation tests for model validation and robustness and the results are presented in Tables 5 and 6 and Figures A1, A2 and A3 in the Appendix. These estimations are used to check the goodness-of-fit of the overall model as they provide an indication of the chain convergence. Focusing on the efficiency summary as given in Table 5,

**Table 5: Efficiency Summary**

|               |                       | AGE    | TSD    | QUAL   | FQUAL  | CORPRISK | Cons.  | Sigma <sub>11</sub> | Sigma <sub>21</sub> | Sigma <sub>22</sub> |
|---------------|-----------------------|--------|--------|--------|--------|----------|--------|---------------------|---------------------|---------------------|
| FLAGROE       | Effective Sample Size | 77.86  | 92.92  | 396.39 | 113.13 | 147.59   | 132.19 | 845.55              | 764.71              | 579.14              |
|               | Correction Time       | 128.44 | 107.62 | 25.23  | 88.39  | 67.75    | 75.65  | 11.83               | 13.08               | 17.27               |
|               | Efficiency            | 0.01   | 0.01   | 0.04   | 0.01   | 0.01     | 0.01   | 0.08                | 0.08                | 0.06                |
| FLAGP<br>ROFM | Effective Sample Size | 153.18 | 71.51  | 253.35 | 60.10  | 170.48   | 229.98 |                     |                     |                     |
|               | Correction Time       | 65.28  | 139.83 | 39.47  | 166.40 | 58.66    | 43.48  |                     |                     |                     |
|               | Efficiency            | 0.02   | 0.01   | 0.03   | 0.01   | 0.02     | 0.02   |                     |                     |                     |
| CASH<br>RATIO | Effective Sample Size | 148.01 | 120.06 | 118.96 | 115.97 | 157.82   | 200.22 | Sigma <sub>11</sub> | Sigma <sub>21</sub> | Sigma <sub>31</sub> |
|               | Correction Time       | 67.56  | 83.29  | 84.06  | 86.23  | 63.36    | 49.95  | 104.22              | 91.64               | 81.13               |
|               | Efficiency            | 0.01   | 0.01   | 0.01   | 0.01   | 0.02     | 0.02   | 95.95               | 109.12              | 123.26              |
| QR            | Effective Sample Size | 220.55 | 446.22 | 316.59 | 324.78 | 142.56   | 222.86 | 0.01                | 0.01                | 0.01                |
|               | Correction Time       | 45.34  | 22.41  | 31.59  | 30.79  | 70.15    | 44.87  | Sigma <sub>41</sub> | Sigma <sub>22</sub> | Sigma <sub>32</sub> |
|               | Efficiency            | 0.02   | 0.04   | 0.03   | 0.03   | 0.01     | 0.02   | 176.70              | 105.97              | 74.82               |
| CR            | Effective Sample Size | 250.92 | 198.45 | 276.11 | 138.23 | 275.37   | 252.81 | 56.59               | 94.37               | 133.66              |
|               | Correction Time       | 39.85  | 50.39  | 36.22  | 72.34  | 36.31    | 39.56  | 0.02                | 0.01                | 0.01                |
|               | Efficiency            | 0.03   | 0.02   | 0.03   | 0.01   | 0.03     | 0.03   | Sigma <sub>42</sub> | Sigma <sub>33</sub> | Sigma <sub>43</sub> |
| FCFCL         | Effective Sample Size | 187.58 | 345.20 | 534.79 | 288.83 | 502.48   | 372.66 | 216.76              | 59.74               | 121.25              |
|               | Correction Time       | 53.31  | 28.97  | 18.70  | 34.62  | 19.90    | 26.83  | 46.13               | 167.40              | 82.47               |
|               | Efficiency            | 0.02   | 0.03   | 0.05   | 0.03   | 0.05     | 0.04   | 0.02                | 0.01                | 0.01                |

**Table 5 (Cont.)**

|          |                       |        |        |        |        |        |               |               |               |
|----------|-----------------------|--------|--------|--------|--------|--------|---------------|---------------|---------------|
| DCR      | Effective Sample Size | 495.91 | 464.70 | 303.35 | 345.17 | 455.97 | $\Sigma_{11}$ | $\Sigma_{21}$ | $\Sigma_{31}$ |
|          | Correction Time       | 20.16  | 21.52  | 32.97  | 28.97  | 21.93  | 463.26        | 166.35        | 423.54        |
|          | Efficiency            | 0.05   | 0.05   | 0.03   | 0.03   | 0.05   | 21.59         | 60.11         | 23.61         |
| DR       | Effective Sample Size | 586.46 | 419.10 | 204.58 | 518.12 | 292.42 | 0.05          | 0.02          | 0.04          |
|          | Correction Time       | 17.05  | 23.86  | 48.88  | 19.30  | 34.20  | $\Sigma_{22}$ | $\Sigma_{32}$ | $\Sigma_{33}$ |
|          | Efficiency            | 0.06   | 0.04   | 0.02   | 0.05   | 0.03   | 191.66        | 342.69        | 159.43        |
| CORPRISK | Effective Sample Size | 639.28 | 262.23 | 328.23 | 376.39 | 330.95 | 52.18         | 29.18         | 62.72         |
|          | Correction Time       | 15.64  | 38.13  | 30.47  | 26.57  | 30.22  | 0.02          | 0.03          | 0.02          |
|          | Efficiency            | 0.06   | 0.03   | 0.03   | 0.04   | 0.03   |               |               |               |

**Note:** MCMC sample size = 10,000.

we find Effective Sample Size (ESS) and efficiency for each of the variable in the model after accounting for autocorrelation among the variables as fair sample sizes for estimating means and standard deviations. Hence, the models are considered good, as it is only when efficiency falls below 0.01 approximately that it calls for some concern. Efficiency for none of the variables in our models as reported in Table 5 is below 0.01, which could be confirmed by the minimum efficiencies of the model estimation as given in Table 3.

Figures A1, A2 and A3 in the Appendix show: (a) trace plots, (b) histogram, (c) autocorrelation and (d) densities of the estimates by parameters. The trace plots for each model show a good stationary pattern that is considered appropriate. Similarly, the histograms have fine distributional shapes, while the autocorrelation graphs drop off relatively quickly in most cases as the three density plots lay on top of each other indicating that the chains of the models are good.

The credible intervals for the regression estimates in Table 3 provide the yardstick for accepting or rejecting the regression results as against the  $p$ -value of non-Bayesian models. One of the post estimations (as in Table 6) is to estimate the probability that the regression results falls within the credible intervals. We are confident that the alternative measures in the models and the pre- and post-estimation tests provide adequate robustness checks for our results.

|         |                  | <i>AGE</i> | <i>TSD</i> | <i>QUAL</i> | <i>FQUAL</i> | <i>CORPRISK</i> |
|---------|------------------|------------|------------|-------------|--------------|-----------------|
| Model 1 | <i>FLAGROE</i>   | 0.95       | 0.95       | 0.95        | 0.94         | 0.95            |
|         | Std. Dev.        | 0.21       | 0.23       | 0.22        | 0.23         | 0.22            |
|         | <i>FLAGPROFM</i> | 0.96       | 0.89       | 0.94        | 0.96         | 0.97            |
|         | Std. Dev.        | 0.20       | 0.31       | 0.24        | 0.19         | 0.16            |
| Model 2 | <i>CASHRATIO</i> | 0.94       | 0.96       | 0.95        | 0.95         | 0.98            |
|         | Std. Dev.        | 0.23       | 0.20       | 0.22        | 0.22         | 0.14            |
|         | <i>QR</i>        | 0.94       | 0.93       | 0.93        | 0.95         | 0.97            |
|         | Std. Dev.        | 0.24       | 0.26       | 0.25        | 0.22         | 0.18            |
|         | <i>CR</i>        | 0.97       | 0.95       | 0.95        | 0.95         | 0.92            |
|         | Std. Dev.        | 0.18       | 0.22       | 0.22        | 0.21         | 0.27            |
|         | <i>FCFCL</i>     | 0.93       | 0.97       | 0.95        | 0.92         | 0.93            |
|         | Std. Dev.        | 0.26       | 0.17       | 0.21        | 0.28         | 0.25            |
| Model 3 | <i>DCR</i>       | 0.94       | 0.94       | 0.96        | 0.81         |                 |
|         | Std. Dev.        | 0.23       | 0.24       | 0.20        | 0.40         |                 |
|         | <i>DR</i>        | 0.92       | 0.98       | 0.87        | 0.97         |                 |
|         | Std. Dev.        | 0.27       | 0.15       | 0.33        | 0.18         |                 |
|         | <i>CORPRISK</i>  | 0.95       | 0.97       | 0.95        | 0.95         |                 |
|         | Std. Dev.        | 0.21       | 0.17       | 0.21        | 0.23         |                 |

| Model 1 | $\text{Sigma}_{11}$ | $\text{Sigma}_{21}$ | $\text{Sigma}_{22}$ |                     |                     |                     |                     |                     |                     |                     |
|---------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|
|         | 904.28              | 42.71               | 7.12                |                     |                     |                     |                     |                     |                     |                     |
| Lower   | 755.43              | 31.82               | 5.93                |                     |                     |                     |                     |                     |                     |                     |
| Upper   | 1077.69             | 55.34               | 8.55                |                     |                     |                     |                     |                     |                     |                     |
| Model 2 | $\text{Sigma}_{11}$ | $\text{Sigma}_{21}$ | $\text{Sigma}_{31}$ | $\text{Sigma}_{41}$ | $\text{Sigma}_{22}$ | $\text{Sigma}_{32}$ | $\text{Sigma}_{42}$ | $\text{Sigma}_{33}$ | $\text{Sigma}_{43}$ | $\text{Sigma}_{44}$ |
|         | 131.79              | 3.69                | 85.18               | 2.13                | 1.17                | 4.17                | 0.01                | 322.37              | 3.05                | 1.63                |
| Lower   | 117.59              | 2.09                | 70.76               | 0.26                | 0.98                | 1.94                | -0.17               | 269.35              | 0.31                | 1.36                |
| Upper   | 147.80              | 5.14                | 99.24               | 4.08                | 1.39                | 6.53                | 0.17                | 377.41              | 6.20                | 1.94                |
| Model 3 | $\text{Sigma}_{11}$ | $\text{Sigma}_{21}$ | $\text{Sigma}_{31}$ | $\text{Sigma}_{22}$ | $\text{Sigma}_{32}$ | $\text{Sigma}_{33}$ |                     |                     |                     |                     |
|         | 0.02                | 0.01                | -0.17               | 0.04                | -0.25               | 65.18               |                     |                     |                     |                     |
| Lower   | 0.01                | 0.00                | -0.31               | 0.03                | -0.47               | 53.76               |                     |                     |                     |                     |
| Upper   | 0.02                | 0.01                | -0.03               | 0.05                | -0.04               | 79.07               |                     |                     |                     |                     |

## Conclusion

The issue of how corporate governance attributes relate to firm performance continues to attract more research due to the inconclusive results from prior studies. We provide incremental insights into how a core corporate governance attribute impacts firms' risk-taking behavior and going concern prospects, as well as the impact of firms' risk-taking on their going concern. Using Bayesian model, this study undertook a multivariate analysis of corporate governance attribute (proxied by board experience) on corporate risk-taking and going concern as well as corporate risk on the going concern for 268 South African firms. This is predicated on the fact that experience is expected to enhance the going concern of firms, since the greater the experience, the better the decisions a board can make. Yet a high level of corporate failures still subsist that threaten shareholders' wealth and the economy by extension.

Given the evidence that a substantial number of estimates provide strong probabilities of a positive influence of experience on the going concern and risk-taking, we conclude that experience as an attribute of corporate governance cannot be overemphasized in ensuring firms' survival. That said, this conclusion should be cautiously considered in the light of some obvious limitations of the study, especially with respect to data persistent issues associated with cross-section analysis. This ultimately seeks to stimulate debate empirically in this yet-to-be well-researched area of corporate governance studies. Future research should consider not only estimating experience indices for this type of studies and experimenting with a panel analysis that covers a longer period of time that could substantiate our findings and provide new knowledge in this regard.

The findings indicate that experience impacts firms' risk-taking behavior and ability to survive in the near future. In specific, the results demonstrate that boards with more experience are likely to undertake optimal risk and are better able to steer their firms to survive into the future in terms of averting abrupt bankruptcy. The results provide evidence to conclude that board experience has a high probability to influence the going concern and risk-taking capabilities of firms. Based on the estimation, the time spent on the board, directors' qualification and age have the most dominant prediction for firms' ability to survive in the near future with a probability of 91%, 63% and 13% respectively for firms' future ROE. Additionally, it is noted that firms' excessive appetite for risk can negatively impact future return on equity and profit margin by 26% and 4% probabilities respectively.

The findings of this study are novel in a number of ways. First, it provides evidence for the first time on the impact of experience which has been stressed by various governance codes as a key attribute of good governance practice on firms' risk-taking behavior and ability to survive in the near future as well as the influence of corporate risk-taking on the going concern. The study makes a unique contribution in terms of the South African context, which has been sparsely researched in this context. Additionally, the paper provides new knowledge in terms of our use of the Bayesian model to estimate the multivariate investigation of experience, corporate risk-taking and going concern. The use of Bayes theorem by this

study provides enhanced information that better improves judgment. The findings, taken together, provide a lead on the implications of corporate selection on the strategic decision of firms' profitability and survival. It also provides decision-making information for regulators in terms of (re)positioning corporate governance practices in emerging markets for better management of stakeholders' value. ■

**Acknowledgment:** The authors sincerely acknowledge the insightful and invaluable contributions of the conference attendees of the South African Accounting Association and the International Association of Accounting Educators and Researchers. The authors also wish to place on record the contributions of the Finance and Accounting Working Group members of the Namibia University of Science and Technology to which the paper was presented in a seminar series, and thank them for their suggestions that have gone a long way in shaping the paper.

## References

1. African Business Magazine (2015), "Analysis: The Top 250 African Companies". Retrieved on March 10, 2019, from <https://africanbusinessmagazine.com/uncategorised/continental/analysis-the-top-250-african-companies/>
2. African Corporate Governance Network (2016), "State of Corporate Governance in Africa: An Overview of 13 Countries", available at <https://doi.org/10.5897/JAE RD12.088>
3. Aldamen H, Duncan K, Kelly S et al. (2012), "Audit Committee Characteristics and Firm Performance During the Global Financial Crisis", *Accounting and Finance*, Vol. 52, No. 4, pp. 971-1000.
4. Ammann M, Oesch D and Schmid M M (2011), "Corporate Governance and Firm Value: International Evidence", *Journal of Empirical Finance*, Vol. 18, No. 1, pp. 36-55.
5. Ararat M, Black B S and Yurtoglu B B (2017), "The Effect of Corporate Governance on Firm Value and Profitability: Time-Series Evidence from Turkey", *Emerging Markets Review*, Vol. 30, November, pp. 113-132.
6. Babatunde A M and Olaniran O (2009), "The Effects of Internal and External Mechanism on Governance and Performance of Corporate Firms in Nigeria", *Corporate Ownership and Control*, Vol. 7, No. 2D, pp. 330-342.
7. Balachandran B and Faff R (2015), "Corporate Governance, Firm Value and Risk: Past, Present, and Future", *Pacific Basin Finance Journal*, Vol. 35, Part A, pp. 1-12.
8. Balasubramanian N, Black B S and Khanna V (2010), "The Relation Between Firm-Level Corporate Governance and Market Value: A Case Study of India", *Emerging Markets Review*, Vol. 11, No. 4, pp. 319-340.
9. Banerjee R and Gupta K (2017), "The Effects of Environmental Sustainability and R&D on Corporate Risk-Taking: International Evidence", *Energy Economics*, Vol. 65, pp. 1-15, available at <https://doi.org/10.1016/j.eneco.2017.04.016>

10. Beiner S, Drobetz W, Schmid M and Zimmermann H (2006), "An Integrated Framework of Corporate Governance and Firm Valuation – Evidence from Switzerland", *European Financial Management*, Vol. 12, No. 2, pp. 249-283.
11. Bhagat S and Bolton B (2008), "Corporate Governance and Firm Performance", *Journal of Corporate Finance*, Vol. 14, No. 3, pp. 257-273.
12. Bhimani A, Azzim M and Lopes S (2009), "The Effectiveness of the Auditor's Going-Concern Evaluation as an External Governance Mechanism: Evidence from Loan Defaults", *International Journal of Accounting*, Vol. 44, No. 3, pp. 239-255.
13. Biddle G C, Hilary G and Verdi R S (2009), "How Does Financial Reporting Quality Relate to Investment Efficiency?", *Journal of Accounting and Economics*, Vol. 48, Nos. 2-3, pp. 112-131.
14. Black B S (2001), "The Corporate Governance Behavior and Market Value of Russian Firms", *Emerging Markets Review*, Vol. 2, No. 2, pp. 89-108.
15. Black B S, Jang H and Kim W (2006a), "Does Corporate Governance Predict Firms' Market Values? Evidence from Korea", *Journal of Law, Economics, and Organization*, Vol. 22, No. 2, pp. 366-413.
16. Black B S, Love I and Rachinsky A (2006b), "Corporate Governance Indices and Firms' Market Values: Time Series Evidence from Russia", *Emerging Markets Review*, Vol. 7, No. 4, pp. 361-379.
17. Bloom D E, Canning D and Sevilla J (2001), "The Effect of Health on Economic Growth: Theory and Evidence", Working Paper No. w8587, National Bureau of Economic Research.
18. Chakraborty A, Gao L and Sheikh S (2018), "Corporate Governance and Risk in Cross-Listed and Canadian only Companies", *Management Decision*, Vol. 57, No. 10, pp. 2740-2757.
19. Claessens S and Yurtoglu B B (2013), "Corporate Governance in Emerging Markets: A Survey", *Emerging Markets Review*, Vol. 15, pp. 1-33, available at <https://doi.org/10.1016/j.ememar.2012.03.002>
20. Cooper S M and Owen D L (2007), "Corporate Social Reporting and Stakeholder Accountability: The Missing Link", *Accounting, Organizations and Society*, Vol. 32, No. 7, pp. 649-667.
21. Donaldson L (1990), "The Ethereal Hand: Organizational Economics and Management Theory", *Academy of Management Review*, Vol. 15, No. 3, pp. 369-381.
22. Donaldson L and Davis J H (1991), "Stewardship Theory or Agency Theory: CEO Governance and Shareholder Returns", *Australian Journal of Management*, Vol. 16, No. 1, pp. 49-64.

23. Doni F and Fortuna F (2018), "Corporate Governance Code in South Africa After the Adoption of Integrated Reporting: Evidence from the Mining Industry", *International Business Management*, Vol. 12, No. 1, pp. 68-81.
24. Elamer A A, AlHares A, Ntim C G and Benyazid I (2018), "The Corporate Governance-Risk-Taking Nexus: Evidence from Insurance Companies", *International Journal of Ethics and Systems*, Vol. 34, No. 4, pp. 493-509.
25. Fama E F and Jensen M C (1983), "Separation of Ownership and Control Separation of Ownership and Control", *Journal of Law and Economics*, Vol. 26, No. 2, pp. 301-325.
26. Francis B B, Hasan I and Wu Q (2012), "Do Corporate Boards Matter During the Current Financial Crisis?", *Review of Financial Economics*, Vol. 21, No. 2, pp. 39-52.
27. Grzenda W (2015), "The Advantages of Bayesian Methods Over Classical Methods in the Context of Credible Intervals", *Information Systems in Management*, Vol. 4, No. 1, pp. 53-63.
28. Gupta K (2018), "Environmental Sustainability and Implied Cost of Equity: International Evidence", *Journal of Business Ethics*, Vol. 147, No. 2, pp. 343-365.
29. Hafsi T and Turgut G (2013), "Boardroom Diversity and Its Effect on Social Performance: Conceptualization and Empirical Evidence", *Journal of Business Ethics*, Vol. 112, No. 3, pp. 463-479.
30. Haniffa R M and Cooke T E (2002), "Culture, Corporate Governance and Disclosure in Malaysian Corporations", *Abacus*, Vol. 38, No. 3, pp. 317-349.
31. Harvey Pamburai H, Chamisa E, Abdulla C and Smith C (2015), "An Analysis of Corporate Governance and Company Performance: A South African Perspective", *South African Journal of Accounting Research*, Vol. 29, No. 2, pp. 115-131.
32. Iannotta G, Nocera G and Sironi A (2013), "The Impact of Government Ownership on Bank Risk", *Journal of Financial Intermediation*, Vol. 22, No. 2, pp. 152-176.
33. Jensen M C and Meckling W H (1976), "Theory of the Firm: Managerial Behavior, Agency Costs and Ownership Structure", *Journal of Financial Economics*, Vol. 3, No. 4, pp. 305-360.
34. Jonty T and Mokoteli M T (2015), "The Impact of Gender Diversity in the Boardroom on Firm Performance: A South African Perspective", *Corporate Board: Role, Duties and Composition*, Vol. 11, No. 1, pp. 71-79.
35. Kiefer M, Jones E A E and Adams A T (2017), "Shareholders and Managers as Principal-Agent Hierarchies and Cooperative Teams", *Qualitative Research in Financial Markets*, Vol. 9, No. 1, pp. 48-71.
36. Kim I, Pantzalis C and Park J C (2013), "Corporate Boards' Political Ideology Diversity and Firm Performance", *Journal of Empirical Finance*, Vol. 21, No. 1, pp. 223-240.



37. Klapper L F and Love I (2004), "Corporate Governance, Investor Protection, and Performance in Emerging Markets", *Journal of Corporate Finance*, Vol. 10, No. 5, pp. 703-728.
38. Koerniadi H, Krishnamurti C and Tourani-Rad A (2014), "Corporate Governance and Risk-Taking in New Zealand", *Australian Journal of Management*, Vol. 39, No. 2, pp. 227-245.
39. Koirala S, Marshall A, Neupane S and Thapa C (2018), "Corporate Governance Reform and Risk-Taking: Evidence from a Quasi-Natural Experiment in an Emerging Market", *Journal of Corporate Finance*, February, pp. 1-22, available at <https://doi.org/10.1016/j.jcorpfin.2018.08.007>
40. La Porta R, Lopez-de-Silanes F, Shleifer A and Vishny R (2000), "Investor Protection and Corporate Governance", *Journal of Financial Economics*, Vol. 58, Nos. 1&2, pp. 3-27.
41. Laeven L and Levine R (2009), "Bank Governance, Regulation and Risk Taking", *Journal of Financial Economics*, Vol. 93, No. 2, pp. 259-275.
42. Leung N W and Cheng M A (2013), "Corporate Governance and Firm Value: Evidence from Chinese State-Controlled Listed Firms", *China Journal of Accounting Research*, Vol. 6, No. 2, pp. 89-112.
43. Lipton M and Lorsch J W (1992), "A Modest Proposal for Improved Corporate Governance", *The Business Lawyer*, Vol. 48, No. 1, pp. 59-77.
44. Liu C, Uchida K and Yang Y (2012), "Corporate Governance and Firm Value During the Global Financial Crisis: Evidence from China", *International Review of Financial Analysis*, Vol. 21, pp. 70-80, available at <https://doi.org/10.1016/j.irfa.2011.11.002>
45. Low D C M, Roberts H and Whiting R H (2015), "Board Gender Diversity and Firm Performance: Empirical Evidence from Hong Kong, South Korea, Malaysia and Singapore", *Pacific Basin Finance Journal*, Vol. 35, Part A, pp. 381-401.
46. Mans-Kemp N and Viviers S (2015), "The Relationship Between Corporate Governance and Dividend Payout Ratios: A South African Study", *Management Dynamics*, Vol. 24, No. 2, pp. 20-36.
47. Meyer E and de Wet Jh (2013), "The Impact of Board Structure on the Financial Performance of Listed South African Companies", *Corporate Board: Role, Duties and Composition*, Vol. 9, No. 3, pp. 29-41.
48. Muchemwa M R, Padia N and Callaghan C W (2016), "Board Composition, Board Size and Financial Performance of Johannesburg Stock Exchange Companies", *South African Journal of Economic and Management Sciences*, Vol. 19, No. 4, pp. 497-513.
49. Nguyen P (2011), "Corporate Governance and Risk-Taking: Evidence from Japanese Firms", *Pacific Basin Finance Journal*, Vol. 19, No. 3, pp. 278-297.
50. Nguyen T, Locke S and Reddy K (2015), "Ownership Concentration and Corporate Performance from a Dynamic Perspective: Does National Governance Quality Matter?",

*International Review of Financial Analysis*, Vol. 41, pp. 148-161, available at <https://doi.org/10.1016/j.irfa.2015.06.005>

51. Nicholson G J and Kiel G C (2007), "Can Directors Impact Performance: A Case-Based Test of Three Theories of Corporate Governance", *Corporate Governance: An International Review*, Vol. 15, No. 4, pp. 585-608.
52. Ntim C G (2011), "The King Reports, Independent Non-Executive Directors and Firm Valuation on the Johannesburg Stock Exchange", *Corporate Ownership and Control*, Vol. 9, No. 1, pp. 428-440.
53. Ntim C G (2012), "Does the South African Stock Market Value an Independent Dual Board Leadership Structure?", *Economics and Business Letters*, Vol. 1, No. 1, pp. 35-45.
54. Ntim C G (2013), "An Integrated Corporate Governance Framework and Financial Performance in South African-Listed Corporations", *South African Journal of Economics*, Vol. 81, No. 3, pp. 373-392.
55. Ntim C G (2015), "Board Diversity and Organizational Valuation: Unravelling the Effects of Ethnicity and Gender", *Journal of Management and Governance*, Vol. 19, No. 1, pp. 167-195.
56. Ntim C G and Osei K A (2011), "The Impact of Corporate Board Meetings on Corporate Performance in South Africa", *African Review of Economics and Finance*, Vol. 2, No. 2, pp. 83-103.
57. Parliament of the Republic of South Africa (2008). Companies Act 71 of 2008. Retrieved from [http://www.acts.co.za/companies-act-2008/29\\_financial\\_statements](http://www.acts.co.za/companies-act-2008/29_financial_statements)
58. Pfeffer J (1972), "Size and Composition of Corporate Boards of Directors: The Organization and Its Environment", *Administrative Science Quarterly*, Vol. 17, No. 2, pp. 218-228.
59. Rebeiz K S (2015), "Boardroom's Independence and Corporate Performance: The Ever-Elusive Conundrum", *Corporate Governance (Bingley)*, Vol. 15, No. 5, pp. 747-758.
60. Rossouw J (2017), "Steinhoff Scandal Points to Major Gaps in Stopping Unethical Corporate Behaviour". Retrieved on March 8, 2019, from <https://mg.co.za/article/2017-12-18-steinhoff-scandal-points-to-major-gaps-in-stopping-unethical-corporate-behaviour>
61. Rossouw G J, Van der Watt A and Malan D P (2002), "Corporate Governance in South Africa", *Journal of Business Ethics*, Vol. 37, No. 3, pp. 289-302.
62. Sami H, Wang J and Zhou H (2011), "Corporate Governance and Operating Performance of Chinese Listed Firms", *Journal of International Accounting, Auditing and Taxation*, Vol. 20, No. 2, pp. 106-114.
63. Sarpong-Danquah B, Gyimah P, Afriyie R O and Asiamah A (2018), "Corporate Governance and Firm Performance: An Empirical Analysis of Manufacturing Listed Firms in Ghana", *Accounting and Finance Research*, Vol. 7, No. 3, pp. 111-118.

64. Schoorman D and Donaldson L (1997), "Toward a Stewardship Theory of Management", *Academy of Management Review*, Vol. 22, No. 1, pp. 20-47.
65. Schultz E L, Tan D T and Walsh K D (2017), "Corporate Governance and the Probability of Default", *Accounting and Finance*, Vol. 57, No. S1, pp. 235-253.
66. Shank T, Hill R P and Stang J (2013), "Do Investors Benefit from Good Corporate Governance?", *Corporate Governance (Bingley)*, Vol. 13, No. 4, pp. 384-396.
67. Sinay M S and Hsu J S J (2014), "Bayesian Inference of a Multivariate Regression Model", *Journal of Probability and Statistics*, Vol. 2014, pp. 1-13, available at <http://dx.doi.org/10.1155/2014/673657>
68. Skae O (2018), "Did Steinhoff's Board Structure Contribute to the Scandal?". Retrieved on March 8, 2019, from <https://theconversation.com/did-steinhoffs-board-structure-contribute-to-the-scandal-89704>
69. South African Qualifications Authority (2001), "Criteria and Guidelines for Assessment of NQF Registered Unit Standards and Qualifications", Pretoria. Retrieved from [www.saqg.org.za/docs/critguide/assessment/ch02.pdf](http://www.saqg.org.za/docs/critguide/assessment/ch02.pdf) Similar
70. Stulz R M (2015), "Risk-Taking and Risk Management by Banks", *Journal of Applied Corporate Finance*, Vol. 27, No. 1, pp. 8-18.
71. Taljaard C C H, Ward M J D and Muller C J (2015), "Board Diversity and Financial Performance: A Graphical Time-Series Approach", *South African Journal of Economic and Management Sciences*, Vol. 18, No. 3, pp. 425-448.
72. The Institute of Directors Southern Africa (2016), "King IV Report on Corporate Governance for South Africa 2016". Retrieved from [https://c.yimcdn.com/sites/iodsa.site-ym.com/resource/collection/684B68A7-B768-465C-8214-E3A007F15A5A/IoDSA\\_King\\_IV\\_Report\\_-\\_WebVersion.pdf](https://c.yimcdn.com/sites/iodsa.site-ym.com/resource/collection/684B68A7-B768-465C-8214-E3A007F15A5A/IoDSA_King_IV_Report_-_WebVersion.pdf)
73. Wang L H, Lin C H, Fung H G and Chen H M (2015), "Governance Mechanisms and Downside Risk", *Pacific Basin Finance Journal*, Vol. 35, Part B, pp. 485-498, available at <https://doi.org/10.1016/j.pacfin.2015.09.001>
74. Waweru N (2014), "Determinants of Quality Corporate Governance in Sub-Saharan Africa: Evidence from Kenya and South Africa", *Managerial Auditing Journal*, Vol. 29, No. 5, pp. 455-485.
75. Yammesri J and Herath S K (2010), "Board Characteristics and Corporate Value: Evidence from Thailand", *Corporate Governance*, Vol. 10, No. 3, pp. 279-292.
76. Zalata A M, Ntim C, Aboud A and Gyapong E (2018), "Female CEOs and Core Earnings Quality: New Evidence on the Ethics Versus Risk-Aversion Puzzle", *Journal of Business Ethics*, Vol. 60, No. 2, pp. 1-20.

## Appendix

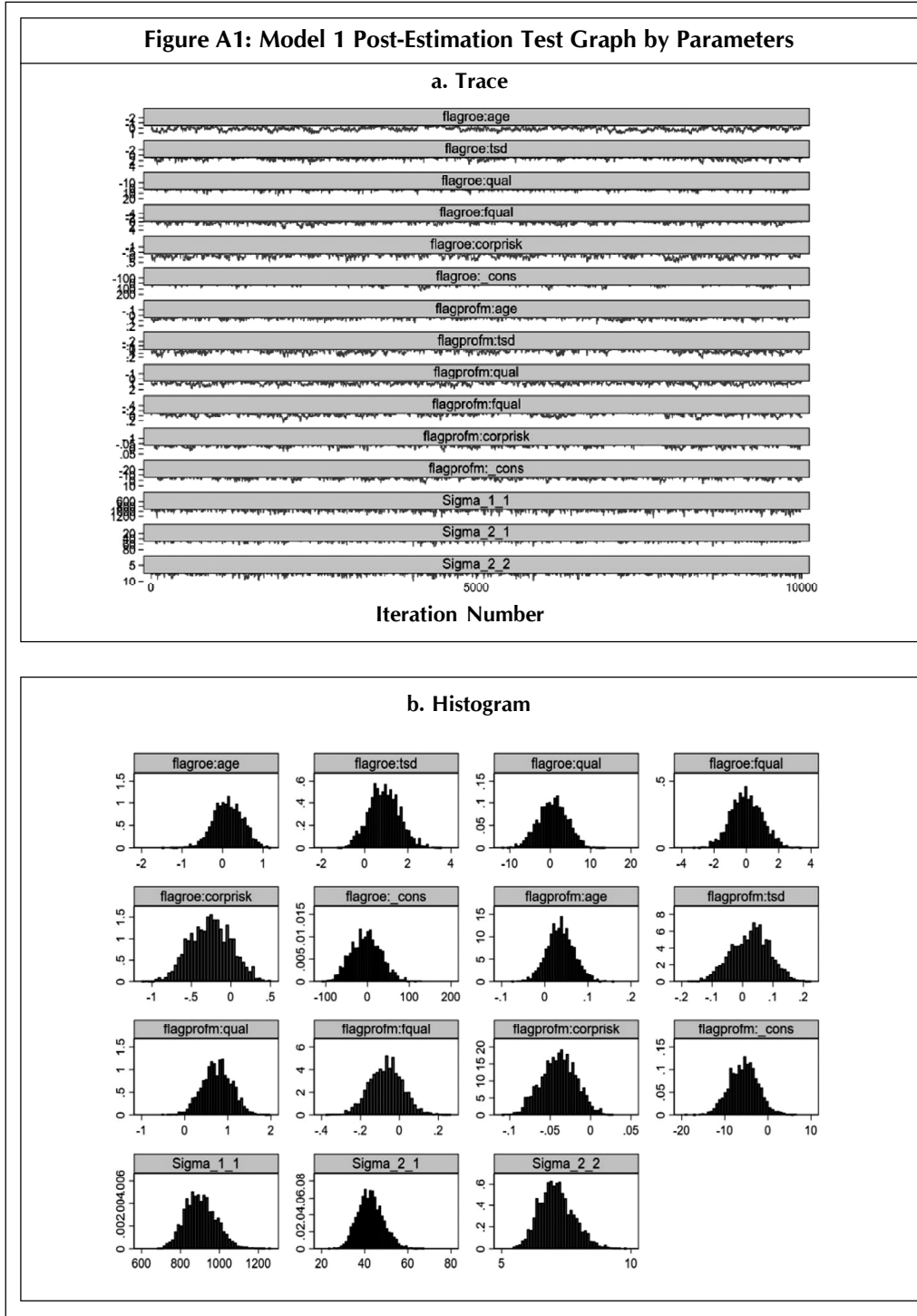
| Table A1: Variable Definition and Source |  |  |  |
|--|--|--|--|
| Variable                                 | Name   | Description and Measurement  | Source   |
| <i>AGE</i>                               | Age of Board Directors   | This is one of the measures for experience variable based on the average of the age of the directors.  | Bloomberg  |
| <i>TSD</i>                               | Time Spent on the Board  | <i>TSD</i> is the second experience measure estimated as the length accumulated by each director while serving on the board.   | Bloomberg  |
| <i>QUAL</i>                              | Directors' Academic Qualifications   | <i>QUAL</i> is measured using South African Qualification Authority (SAQA)'s ranking of educational qualification rating document. Each director's qualification were ranked and averaged over the number of total directors to provide a data point for each firm | This is hand-collected data from board of director's section of each firm's website. |
| <i>FQUAL</i>                             | Board Professional (i.e., Accounting or Finance) Qualification Composition (%) | This variable relates to professional qualification of board members.  | This is hand-collected data taken from firm's website.                               |
| <i>ROE</i>                               | Return on Equity   | This is one of the measures of going concern. <i>ROE</i> represents accounting ratio surrogating profitability of each firm.   | Bloomberg  |
| <i>ROA</i>                               | Return on Asset  | <i>ROA</i> is sampled firm's average return on asset.  | Bloomberg  |
| <i>PROFM</i>                             | Profit Margin  | This is also one of the measures of going concern. And <i>PROFM</i> represent accounting ratio surrogating profitability of each firm.   | Bloomberg  |
| <i>CASHRATIO</i>                         | Cash Ratio   | <i>CASHRATIO</i> is one of the parameters used to assess going concern of each firm. It is measured as cash plus marketable securities divided by current liabilities.   | Bloomberg  |
| <i>QR</i>                                | Quick Ratio  | <i>QR</i> is also one measure for going concern in terms of liquidity. It is   | Bloomberg  |

## Appendix (Cont.)

| Variable         | Name                                  | Description and Measurement   | Source    |
|------------------|---------------------------------------|---|-----------|
|                  |                                       | measured as the current assets less inventory divided by current liabilities for each firm.   |           |
| <i>CR</i>        | Current Ratio                         | <i>CR</i> is used to proxy going concern and measured as current assets divided by current liabilities for each firm.   | Bloomberg |
| <i>DR</i>        | Debt Ratio                            | Is a firm's total liabilities divided by total assets.  | Bloomberg |
| <i>FCFL</i>      | Free Cash Flow to Current Liabilities | Measures the ability of a firm to sustain current and future repayments.  | Bloomberg |
| <i>DCR</i>       | Debt Capital Ratio                    | This is calculated as total debt divided by total capital for each firm.  | Bloomberg |
| <i>CORPRISK</i>  | Corporate Risk-Taking                 | This is our risk measure, operationalized as the volatility from market adjusted return on asset. The procedure is to take the standard deviation from the adjusted market return on assets and squared to eliminate negative values and then taking the square root. | Bloomberg |
| <i>FLAGROE</i>   | Forward Lag Return on Equity          | This is used to capture future profitability. Thus, <i>FLAGROE</i> is one year ahead ROE consistent with the going concern assumptions.   | Bloomberg |
| <i>FLAGPROFM</i> | Future Profit Margin                  | <i>FLAGPROFM</i> is one year ahead profit margin consistent with the going concern assumptions.   | Bloomberg |

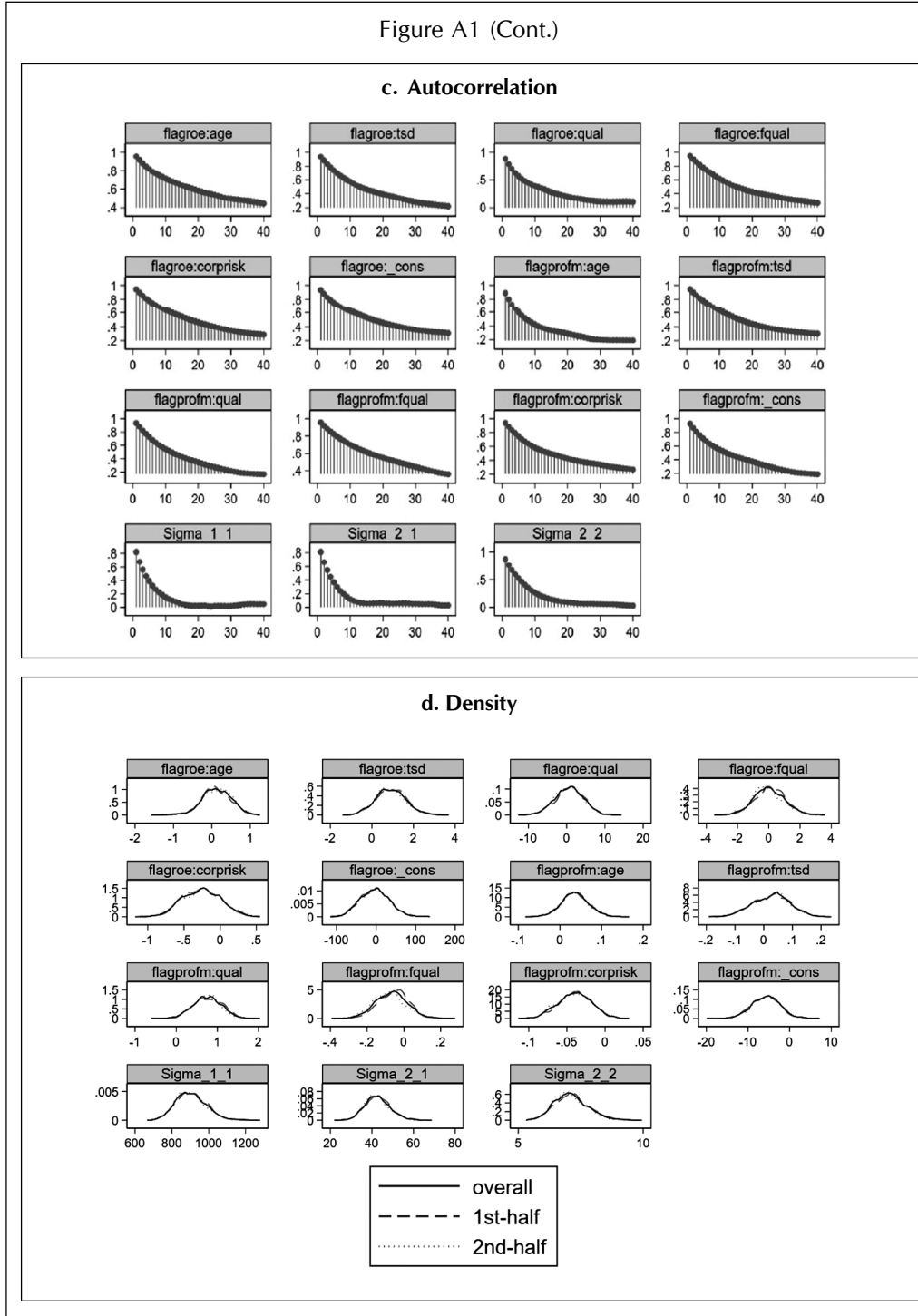
## Appendix (Cont.)

**Figure A1: Model 1 Post-Estimation Test Graph by Parameters**



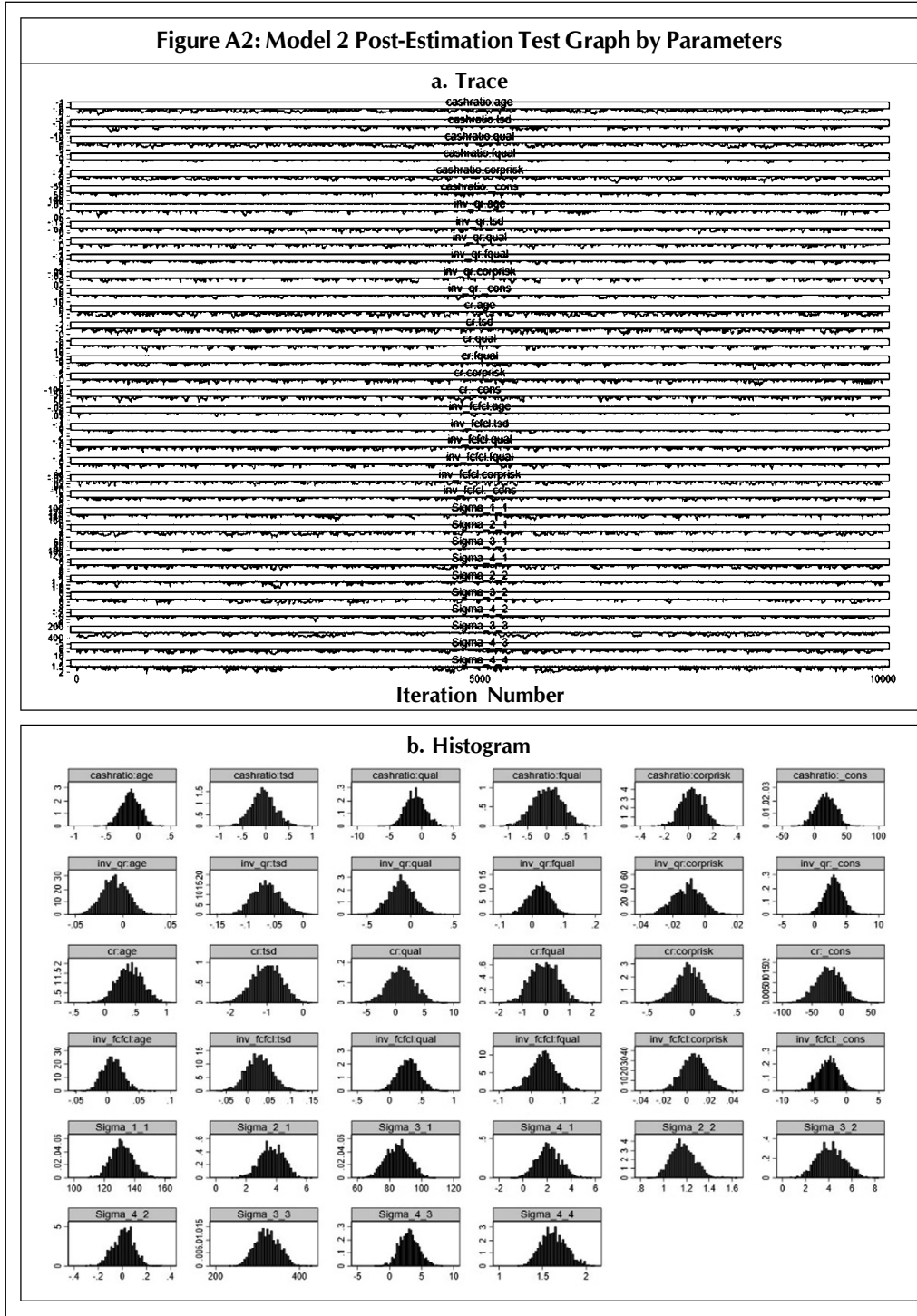
## Appendix (Cont.)

Figure A1 (Cont.)



Appendix (Cont.)

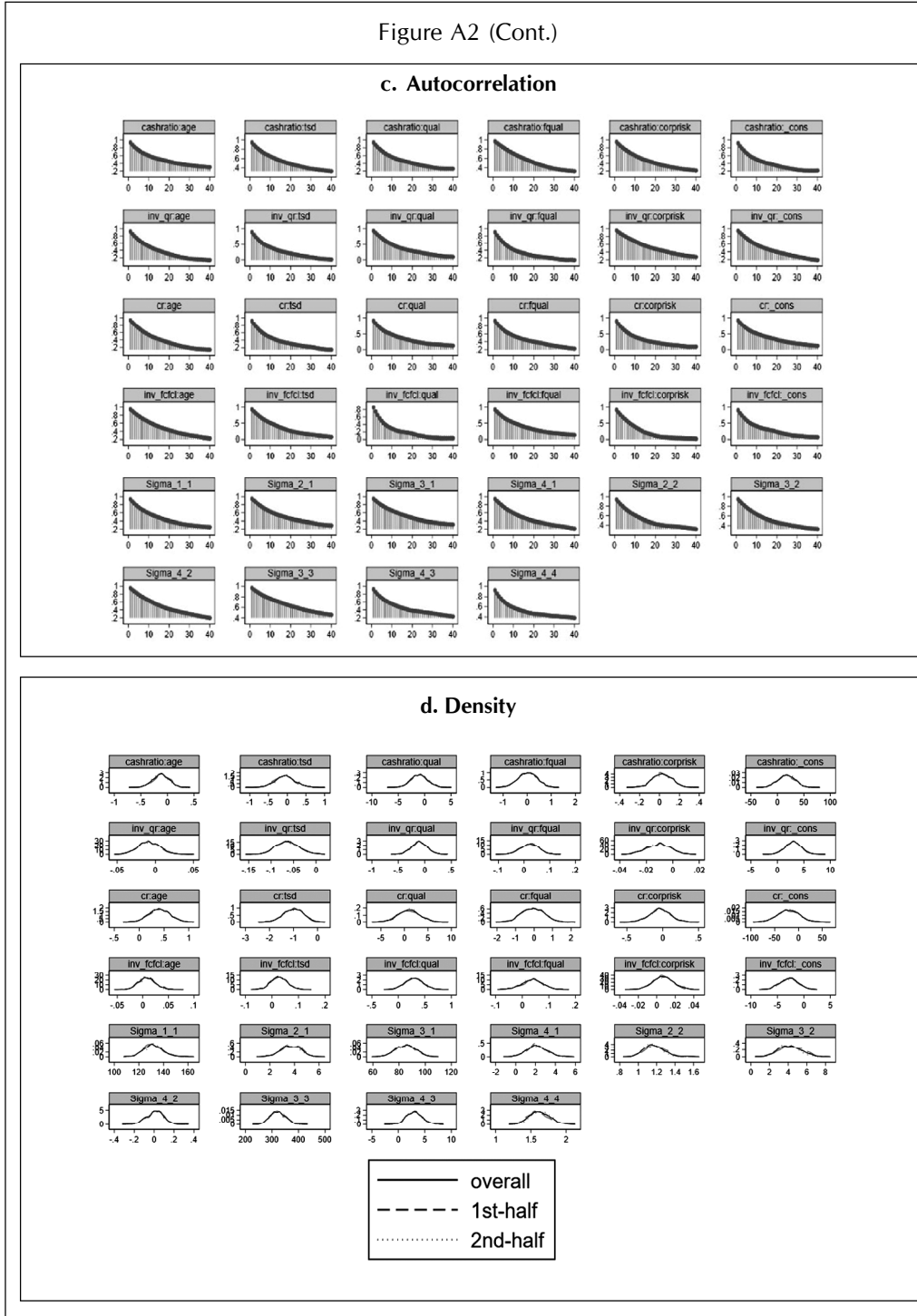
Figure A2: Model 2 Post-Estimation Test Graph by Parameters



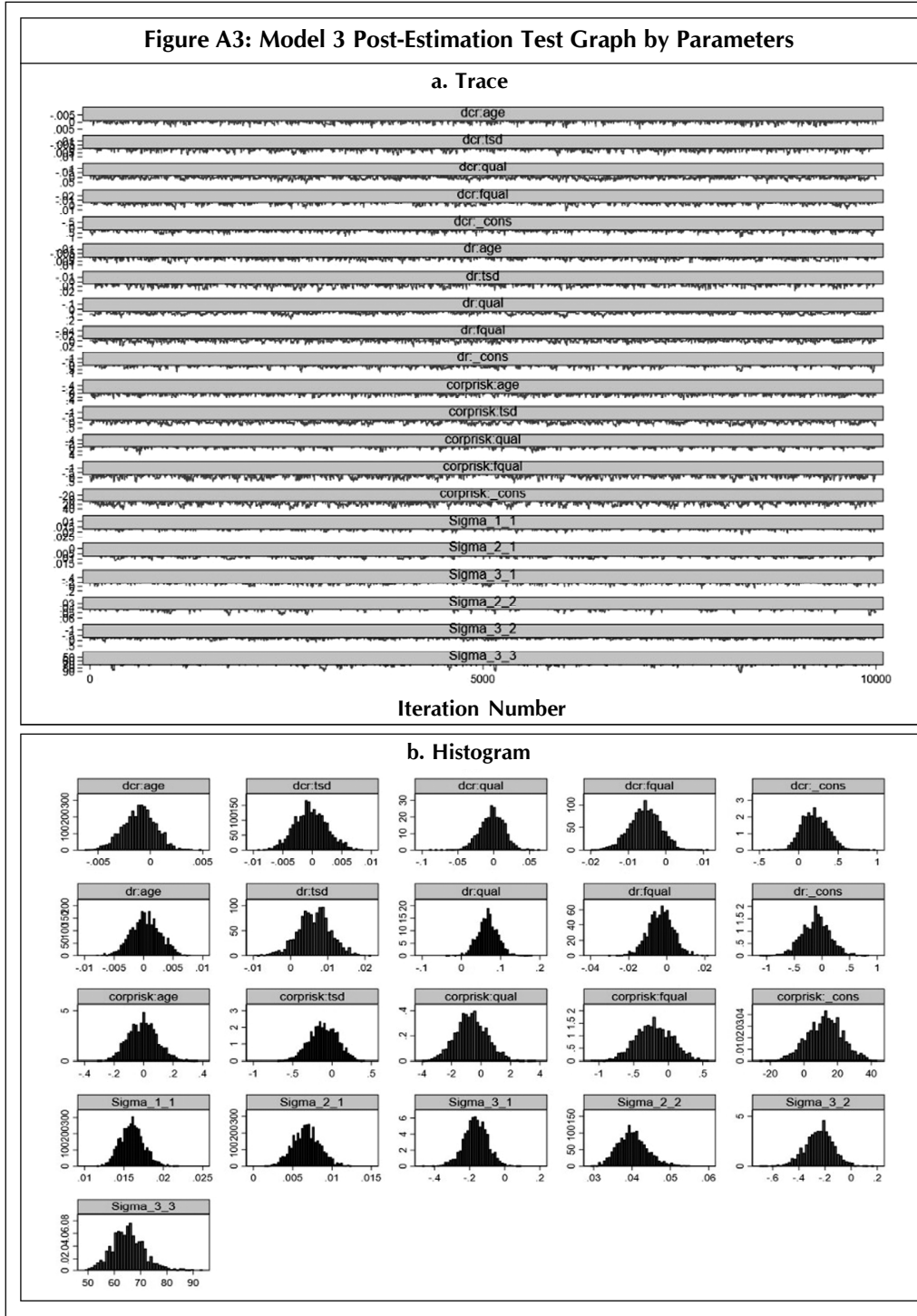


Appendix (Cont.)

Figure A2 (Cont.)

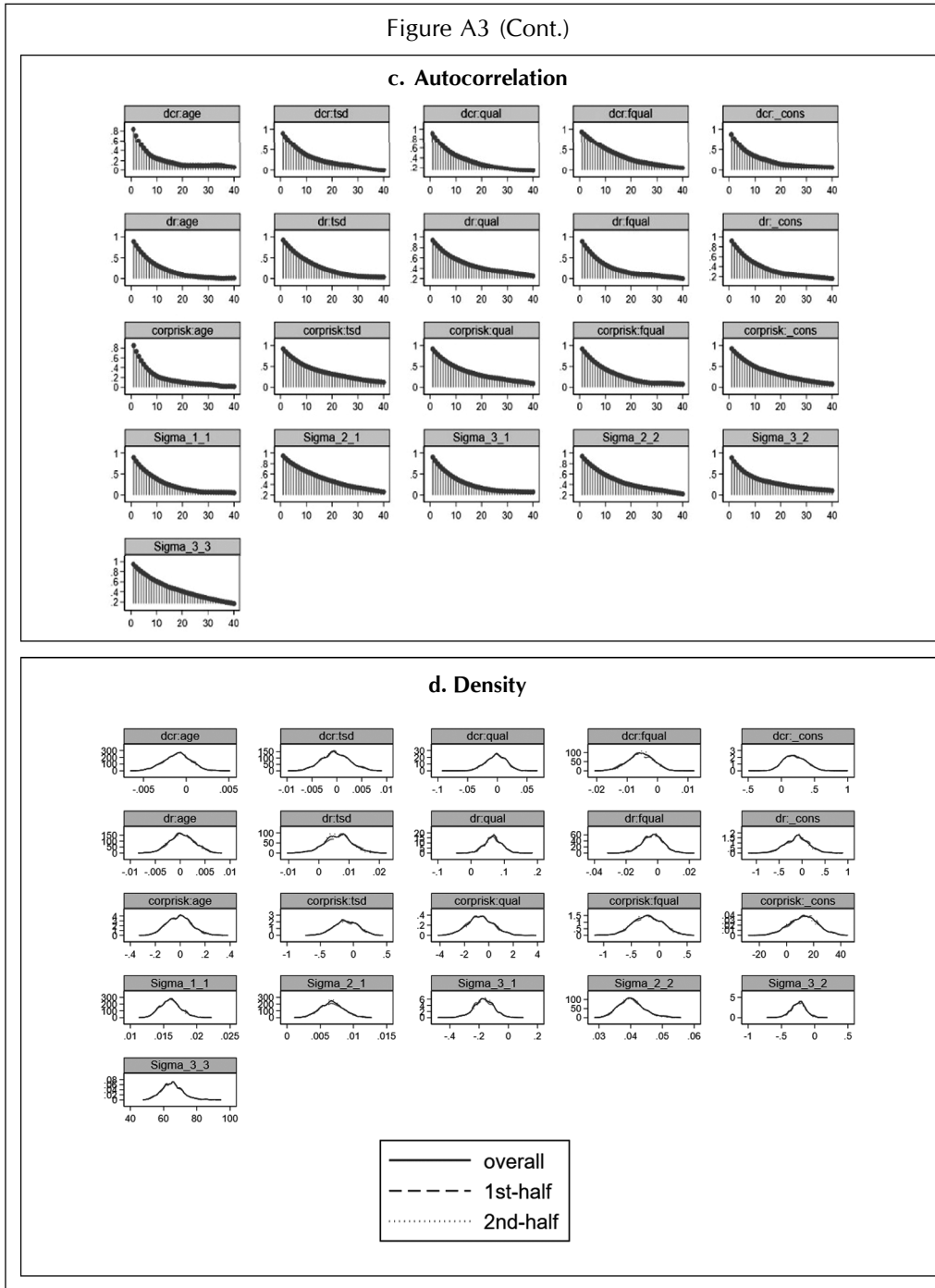


Appendix (Cont.)



Appendix (Cont.)

Figure A3 (Cont.)



Reference # 09J-2020-01-02-01

Reproduced with permission of copyright owner. Further reproduction prohibited without permission.