

# The Impact of Corporate Governance of Banks on Stock Market Performance during COVID-19 Pandemic: Evidence from Johannesburg Stock Exchange Using PLS-SEM Approach

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## Abstract:

The paper aims to analyse empirically the impact of internal mechanisms of corporate governance of banks on stock market performance, employing six corporate governance mechanisms to examine their impact on five market performance measures. The statistical sample of the study included the eight listed banks on the Johannesburg Stock Exchange for the selected period of 2019-2022. To this end, a PLS-SEM approach was employed using SmartPLS v.4 software package. Our empirical results indicate that mechanisms of corporate governance of banks had a significant positive impact on JSE performance during the Covid-19 crisis, suggesting that corporate governance may have moderated the adverse effect of the financial crisis on the stock market performance. These striking results can be attributed to and validate the argument that effective internal corporate governance practices could improve stock market performance during pandemics and crises.

**Keywords:** corporate governance of banks; stock market performance; crisis; COVID-19; Johannesburg Stock Exchange

**(JEL) Classification:** G01, G21, G32, G34, O16

## 1. Introduction:

World Health Organization declared COVID-19 a global outbreak of pandemic on March 11, 2020, and considered it a “once-in-a-century pathogen” (Padhan & Prabheesh, 2021). Unlike past health crises that were more localized, the highly contagious coronavirus disease affected the world to an unprecedented extent, as it rapidly spread from China to over 192 countries (Ye, Zhang, Wang, Huang, & Song, 2020). From December 2019 to December 2022, over 649 million confirmed cases and over 6.6 million deaths have been reported globally (WHO, 2022). Even though, the pandemic arrived in South Africa at a late stage compared to the rest of the world. However, South Africa ranked first as the country with the highest incidence of COVID-19 in Africa both in terms of the number of confirmed cases and deaths. On March 23, 2020, the president announced a state of national catastrophe (Mokoena & Nomlala, 2022).

The “resting” mode of the world has resulted in a tremendous financial crisis (Chowdhury, Khan, & Dhar, 2020). According to the World Bank (2020), the pandemic generated ‘the largest economic shock that the world has experienced in decades’, it has been stated as a “black swan effect” (Westhuizen,

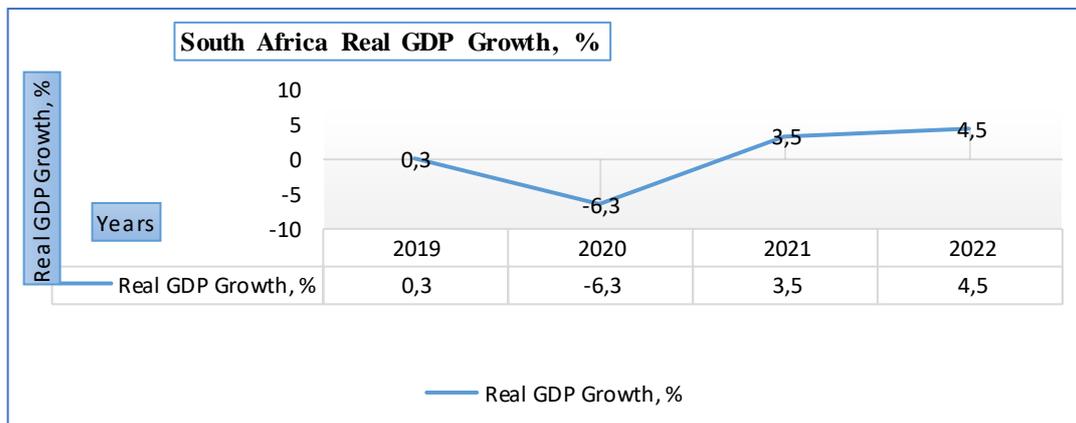
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Eyden, & Aye, 2022). The widespread outbreak could not have been predicted very early and economies worldwide, including strong economies like the U.S., went into a state of global shock (Roy, 2020). The pandemic created severe economic impacts in different sectors of the economy negatively affecting global trade, interest rates, and financial market liquidity and creating demand and supply shocks (Roy, 2020). Consequently, several industries - airlines, travel, and tourism, hotels - have encountered great challenges in sustaining their business models (Salah Uddin, Yahya, Goswami, Lucey, & Ahmed, 2022).

COVID-19 has negatively impacted countries worldwide in terms of economic growth. Figure 2 shows that the GDP for South Africa has recorded a significant decline from the onset of the pandemic. In 2020 there was a negative GDP growth reported by -6.3%, which is an indicator that markets are influenced by the COVID-19 pandemic. While in 2021 and 2022, the growth recorded 3.5% and 4.5% respectively.

**Figur(01): South Africa’s Real GDP Growth in 2019-22**



**Source:** Authors’ own, based on historical data sourced from the Department of Statistics South Africa

From the perspective of the financial system, particularly the financial markets, the COVID-19 pandemic has been the worst period for global stock markets since the global financial crisis (GFC) of 2008-09 (Rehman, Ahmad, Shahzad, & Vo, 2022). The contagion triggered a failure in worldwide stock markets resulting in an unpredictable setting with critical liquidity levels. Owing to the rapid spread of the highly infectious disease and death cases, many individuals including investors across the globe are uncertain. Such uncertainties are expected to negatively affect the performance of the stock market. Uncertainty produces anxiety that can have a depressive effect on investment decisions, stock prices, and stock market performance, eventually (Tetteh, Amoah, Ofori-Boateng, & Hughes, 2022). The world’s stock markets have suffered unparalleled decreases in the face of great uncertainty (Nicola, et al., 2021) (Latif, et al., 2021).

Not surprisingly, the banking sector was not exempted from this economic shock and financial distress, despite the extraordinary monetary, fiscal, and financial policies implemented throughout the crisis period (Cao & Chou, 2022). The COVID-19 pandemic represented the biggest test for banks since the 2008 financial crisis. Against this backdrop, banks needed to make the right decisions so that they be

able to weather the pandemic shock, which pushed the global economy into recession. Good governance and effective internal controls played an important role in fostering responsible decision-making (European Central Bank, 2020). Corporate governance (CG) is one of the factors in ameliorating economic efficiency and financial performance and incorporates a set of communications between firm administration, board structure, shareholders, and other categories of stakeholders (Pourmansouri, Mehdiabadi, Shahabi, Spulbar, & Biraru, 2022).

In light of all information above, the research question to be analysed reads as follows:

**RQ.** Did corporate governance of banks impact the JSE performance during the COVID-19 pandemic?

To test this link, we study the impact of CG of banks' mechanisms on the JSE performance, which is our research focus.

The scarcity of empirical evidence on the relationship between the corporate governance of banks and stock markets is one of the main motivations of our paper. The main contributions of the current study in filling the prior gap, especially in terms of specificity and implementation approaches, could be summarized as the study: (i) Clarifies, measures, and quantifies the impact of CG of banks on the South African stock market through computing the correlation function between CG mechanisms and stock market performance, depending on a group of listed banks in the Johannesburg Stock Exchange during the COVID-19 pandemic. (ii) Emphasizes the role of the banking sector as an effective partner in enhancing the performance of the stock market. (iii) Provides future research directions on the linkage between effective CG of banks and the mitigating of the financial crises on equity markets. The study focuses on the South African stock market as it is one of the fastest developing markets, and its property sector is the only globally reported sector on the African continent (Akinsomi, Kola, Ndlovu, & Motloug, 2016). JSE, like the worldwide financial markets, has been marked by increasing volatility during the pandemic. It is vital to investigate the influence of the CG of banks on this volatility since the findings give essential information for stock market participants, academics, and practitioners.

The arrangements of the following paper are organized into five sections as follows: Section 2 presents the literature review of relevant research. Section 3 explains the variables, data, and methodology employed in this investigation. Section 4 analyses the data and tells the empirical results and Section 5 wraps up a discussion based on the findings of the study, conclusion and implication.

## **2. Literature Review and Hypothesis Development:**

In this section, we review the theoretical and empirical literature dealing with the relationship between the corporate governance of banks and the stock market performance. In light of this review, our research hypotheses are developed.

### **2.1. Corporate governance of banks:**

*Why does corporate governance of banks matter?*

Well-governed banks are more likely to allocate capital efficiently and less likely to fail. They are thus more likely to assure that other firms also allocate capital efficiently and contribute to monetary and financial stability, which itself is likely to encourage investment and growth (Mullineux, 2006).

Especially in times of crises, a well-governed bank, with a clear understanding of its main risks and core revenue sources, is likely to adapt more quickly and perform better (Elderson, 2022). At the same time, the poor performance of many banks has often been linked to poor governance practices and the failure of boards of directors to perform in the best interests of the related stakeholders (Erkens, Hung, & Matos, 2012).

It is hardly astonishing that the special characteristics of banks demand, in turn, a special variety of CG (Hopt, 2021). The CG of banks and other financial institutions gained much attention after the financial crisis of 2008-09, which witnessed serious failures in the banking sector (Vasudev & Guerrero, 2014; Hopt, 2021). Since the crisis, the risk management function has received increasing attention due to its decisive role in curbing risk-taking. The regulation calls for boards of directors and committees that prevent the undertaking of excessive risk by financial institutions. Thus, it is not surprising that regulators and practitioners have responded, proposing long overdue principles of good CG. There is extensive literature that examines CG in banks and how it differs from that in nonfinancial firms (Levine, 2004; Mülbert, 2009). For several reasons, the governance of banking firms may be different from that of unregulated, nonfinancial firms. For one, the number of parties with a stake in an institution's activity complicates the governance of financial institutions. In addition to investors, depositors, and regulators have a direct interest in bank performance. On a more aggregate level, regulators are concerned with the effective governance has on the performance of financial institutions because the health of the overall economy depends upon their performance (Adams & Mehran, 2003).

As a result, the banking firms' boards of directors are given a key position in their governance structures. The role of the board of directors has been examined widely in CG literature: The ability to foster effective task performance is contingent on competent oversight of management behavior (Agency Theory) (Fama & Jensen, 1983; Eisenberg, Sundgren, & Wells, 1998); Acting as a mentor to the management by providing sound professional advice (Stewardship Theory) (Davis, Schoorman, & Donaldson, 1997; Keay, 2017); Supplying the organization with required resources through connections with the external environment (Resource Dependence Theory)(Pfeffer, 1972; Hillman A. , 2000); Facilitating the acquisition of resources such as capital and business partnership that are critical to the success of the organization (The Resource-based View) (Wernerfelt, 1984; Arya & Lin, 2007).

## **2.2 Stock markets performance during the COVID-19 pandemic:**

The catastrophic impact of a financial crisis is one of the most researched issues in financial markets worldwide (Chopra & Mehta, 2022). Besides studying the effects of the crisis on the real economy, several researchers have recently investigated the impact of the COVID-19 pandemic on global financial markets, highlighting the role of the pandemic as a source of financial volatility and market distress. Previous studies have used three main approaches: The first, is to assess the impact of COVID-19 public policy responses on the financial market (Baker, et al., 2020); The second, is to use the increase in COVID-19 cases and the uncertainty surrounding the confirmed cases (Baig, Butt, Haroon, & Rizvi, 2021; Mokoena & Nomlala, 2022); The third, is to assess the impact of perceived risk on market volatility

following the announcement of the pandemic state by the WHO, and unexpected news (Phan & Narayan, 2020).

After COVID-19 spread worldwide, the financial markets experienced strong fluctuations and exhibited heterogeneous behaviors towards socio-economic and political announcements on the epidemic (Pagnotoni, Spelta, Pecora, & Flori, 2021; Jin, et al., 2022). Its effect on economic and market activity has led to a level of risk aversion behavior seen after the global financial crisis, a 30% decline in stock markets and implied volatilities of equities and oil have increased to crisis levels (OECD, 2020). Markets have become volatile because of the pandemic (Baur, 2020; Sharma, 2020).

### 2.3. Impact of CG of banks on stock market performance:

Several existing studies on the nexus between CG and the stock market performance indicator highlighted the relationship between CG and the stock market. (Pajuste, 2002) Find that the effectiveness (enforcement) of financial regulations has the highest explanatory power of stock market returns in the Central and East European (CEE) countries. The protection of minority shareholders significantly impacts market activity, measured by market turnover to market capitalization ratio. In the same context, (Hooper, Sim, & Uppal, 2009) suggest that countries with better-developed governance systems have stock markets with higher returns on equity and lower levels of risk. The results lend support to the view that a precondition for financial market development is the improvement of the institutions, which govern the process of exchange.

A study by (Aloui & Jabouri, 2018) confirms the fact that CG affects stock market performance during crises. The results of the study suggest that investors need to appraise seriously the firm's corporate governance when making investment decisions because a better CG not only has a positive effect on the stock returns but also can stabilize the stock prices during a financial crisis.

Only a few studies have focused on the role played by the CG of banks in improving the stock market performance. Results show that the stock market performance can be affected by the banking governance processes through the impact of the principles of governance on the market indicators (trading value, number of deals, number of companies, and trading days), as reviewed by (Hussein, 2022). (Carlini, Cucinelli, & Previtali, 2020) Investigating the effect of media talk on bank stock returns in response to corporate governance news, the study argues that media talk on bank corporate governance events is an important determinant of abnormal stock return.

The review of extant literature emanates the ensuing hypothesis:

**Hypothesis 1 (H1).** There is a positive relationship with statistically significant CG mechanisms and the performance of the JSE during the COVID-19 pandemic.

## 3. Methodology and variables measurement:

### 3.1. Sample and data:

Our initial sample consists of all listed banks in the JSE. The CG variables and other financial data were compiled by scanning CG reports and the annual financial results of the banks under review. The total stocks traded value for the dependent variable was collected from the World Bank Development

Indicators data stream. The data regarding the other stock market performance measures and control variables were sourced from the JSE-published statistical bulletin. Online search data were collected from the Google Trends website, and the daily cases and deaths of COVID-19 were from the World Health Organization website. The sample period is from January 1, 2019, to December 31, 2022.

### 3.2. Measurement of variables:

#### 3.3.1. Stock Market Performance Measures

The dependent variable in this research is market performance, which is formed by five indicators that are: trades, trading value, trading volume, number of listed companies, and market capitalization.

#### 3.3.2. Corporate Governance Mechanisms

As an independent variable, we adopt six internal CG of banks measures (board size, board independence, CEO duality, number of board committees, number of board meetings, and number of audit committee meetings).

#### 3.3.3. Control Variables

As control variables, we use other corporate governance measures as well as firm-specific characteristics. Concerning corporate governance, we consider the proportion of female directors among the total number of directors (FEM). This variable may impact the results since the literature shows that female directors are generally more risk-averse than males when defining firm financial policies and affect stock market performance differently.

Regarding bank characteristics, we use bank size (SIZE) since this variable is reported to influence a bank's risk levels. Table 1 shows that.

### 3.3. Research Method:

This study adopted a quantitative research technique to investigate the impact of corporate governance of banks on stock market performance in the Johannesburg Stock Exchange, by employing a quantitative research method. A Microsoft Excel spreadsheet was used to enter all the gathered data and to make inferences, the data obtained was then analysed with the PLS-SEM approach using SmartPLS v.4 software package for simulation and modelling process in determining the significant and dominant factors and to run the statistical analysis. SmartPLS was used because it supports both exploratory and confirmatory research; it is robust to deviations for multivariate normal distributions and is good for a small sample size.

#### *PLS Structural Equation Modelling (PLS-SEM)*

Partial Least Squares based Structural Equation Modelling (PLS-SEM) is a collection of statistical techniques that allow a set of relations between one or more independent variables, either continuous or discrete, and one or more dependent variables, either continuous or discrete, to be examined (Ullman, 2006). SEM aims to understand the relationship between latent constructs (factors) that are generally

indicated by various measures. It is also known as latent variable analysis as well as covariance structure analysis. It adopts a confirmatory approach rather than an exploratory one (Dash & Paul, 2021).

PLS-SEM technique has been selected for this research due to the following reasons (Kumar, Singh, & Jain, 2022):

- It can handle very complex models with many indicators and constructs.
- It can efficiently handle non-normalized and missing data.
- It can give better results regardless of sample and population size.
- It can derive determinate latent variable scores, which can be applied in subsequent analyses.

#### 4. Data Analysis and Results:

Before discussing the path analysis among the latent variables (factors/ constructs), these unobserved variables were measured first. These cannot be measured directly; hence, numerous observed variables are calculated first, and latent variables or constructs are derived from these indicators. Each latent variable is measured by observed variables that are tested for reliability and validity.

To evaluate the quality of the model according to the PLS-SEM methodology, it is necessary to evaluate the measurement model that examines the relationship between corporate governance of banks and its indicators, then the stock market performance and its indicators, and then the structural model that examines the relationship between corporate governance of banks and stock market performance.

##### 4.1. Evaluation of the Measurement Model:

Evaluation of the measurement model (outer model) is to examine the reliability and validity of the constructs of the model. It determines how well the indicator load on the theoretically defined constructs (Hulland, 1999).

Before the structural model and the relationship, the constructs were tested for Reliability, Convergent Validity, and Discriminant Validity of the research instrument. Through reliability, we estimate to ensure that the items assumed to measure each latent variable measure them and not measure another latent variable. Reliability was measured by the Stability of Internal Consistency using Cronbach's Alpha coefficient (It measures how well a set of variables measures a single one-dimensional latent construct). Whose value in this study was 0.766 for corporate governance of banks, and 0.717 for JSE performance, which in both cases is an acceptable value since it is higher than 0.7. The Composite Reliability value CR also measured (It is used to check how well a construct is measured by its assigned indicators), which was in this study very acceptable as it was greater than 0.7 (The benchmark for modest composite reliability) for the two constructs (See Tab. 2). Thus, the internal consistency reliability is confirmed.

Additionally, Average Variance Extracted (AVE) test was used to assess the internal consistency of the construct by measuring the amount of variance that a latent variable captures from its measurement items relative to the amount of variance due to measurement errors. AVE value for CG of banks estimated by 0.488, for JSE performance was higher than 0.5, confirming convergent validity.

**Table (01): Measurement accuracy assessment**

	Cronbach's alpha	Composite Reliability	Average Variance Extracted
CG of Banks	0.766	0.876	0.488
JSE Performance	0.717	0.843	0.576

**Source:** Authors' own using SMART-PLS v.4

The result shown in Table 1 meets the requirements reflecting that an internal consistency exists, indicating the reliability of these values.

While the asymptotic validity is tested through Factor Loadings, as shown in table 2.

**Table (02): Factor Loadings and their statistical significance using the bootstrap procedure**

	Sample (O)	Sample mean (M)	Standard deviation (STDEV)	T statistics ( O/STDEV )	P values
AM <- Banking Governance	0.640	0.611	0.192	3.325	0.001
BM <- Banking Governance	0.673	0.640	0.152	4.418	0.000
BS <- Banking Governance	0.817	0.806	0.101	8.100	0.000
CAPITAL <- Stock Market _Performance	0.788	0.610	0.469	1.681	0.093
COM <- Banking Governance	0.613	0.590	0.209	2.933	0.003
COMP <- Stock Market _Performance	-0.512	-0.006	0.613	0.835	0.404
FEM <- Number of Female_Directors	1.000	1.000	0.000	0.000	0.000
IND <- Banking Governance	0.731	0.714	0.146	5.018	0.000
SIZE <- Bank Size	1.000	1.000	0.000	0.000	0.000
TRAD <- Stock Market _Performance	0.740	0.539	0.460	1.608	0.108
T_VAL <- Stock Market _Performance	0.924	0.365	0.667	1.386	0.166
T_VOL <- Stock Market _Performance	0.773	0.579	0.450	1.719	0.086

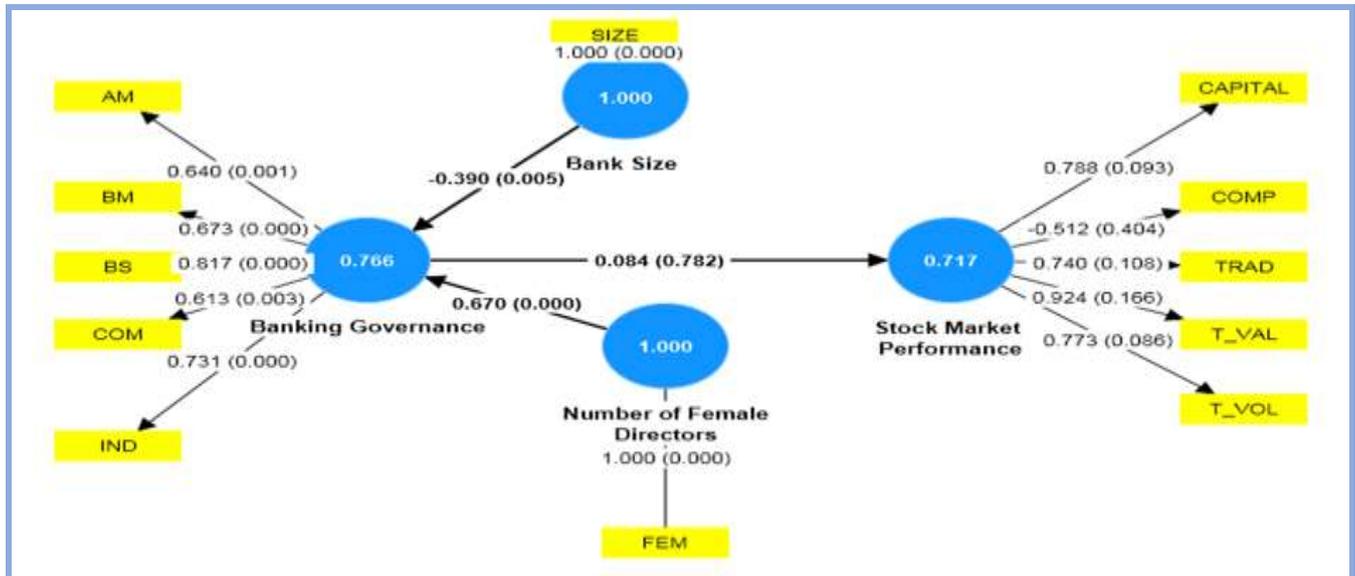
**Source:** Authors own using SMART-PLS v.4

Through the above table and looking at P-Value, it is clear that all indicators of corporate governance of banks are statistically significant (probability less than 0.05), this indicates that they represent this latent concept, but their varying values indicate a disparity in the representation of this concept from one indicator to another. The largest value was of infecting the board size followed by board independence, and then the rest of the variables were close. As for the stock market performance, it is noticed that most of its indicators were not significant, except for the market capitalization and trades, which were significant at 10%.

#### 4.2. Structural Model:

The structural model examines the relationship between the underlying variables that is between corporate governance of banks represented by its six indicators and stock market performance represented by its five indicators as well, with the presence of control variables that are supposed to affect the number of women in the board of directors, as shown in figure 2.

Figure(02): Structural Model Results of the Impact of CG of banks on JSE Performance



Source: Authors' own using SMART-PLS v.4

Notice: In parentheses represents the probability using the P-Value.

The PLS-SEM estimation results for the structural model, path coefficient values as well as the factor loadings for the research constructs are shown in Figure 2.

The above figure shows clearly that there is a positive effect of corporate governance of banks on JSE performance, but this effect is weak and non-significant, as the value of this effect reached 0.084 standard deviations, that is when CG of banks rises by 1 standard deviation, the stock market performance increases by 0.084 standard deviations.

The results also show the significant and negative effect of bank size on banking governance whenever the size of the bank decreases with one standard deviation, this led to an increase in CG of banks by 0.39 standard deviation. There is also a positive and significant impact of the number of women on the board of directors on CG, the more women are represented in the board of directors by 1 standard deviation, CG increases by 0.67 standard deviations. The results portrayed in Table 3 shows that **H1** is supported.

Table (03): Build Model Coefficient

	Sample mean (M)	Standard deviation (STDEV)	T statistics ( O/STDEV )	P values
Bank Size → Banking Governance	-0.396	0.137	2.844	0.005
Banking Governance → Stock Market_Performance	0.075	0.302	0.277	0.782
Number of Female_Directors → Banking Governance	0.668	0.116	5.789	0.000

Source: Authors' own using SMART-PLS v.4

## 5. Discussion and Conclusion:

The stock market meltdown in late 2019 constituted a major stress test for the corporate governance models since the 2008 crisis. This research, is based on case studies of all listed banks in the Johannesburg Stock Exchange. We isolate several internal governance mechanisms that are likely to be related to stock market performance; using these mechanisms, the study investigated the relationship and the impact of CG of banks on stock market performance amidst the crisis.

Given the extensive prior literature on the positive impact of good corporate governance of banks on stock market performance, we hypothesized that corporate governance mechanisms are associated with better financial and stock market performance during the crisis. Our empirical results indicated that the mechanisms of CG of banks had a significant positive impact on JSE performance during the Covid-19 crisis, suggesting that CG may have moderated the adverse effect of the financial crisis on the stock market performance. We believe that our findings further confirm the importance of CG and help investors and financial economists understand the importance of applying good CG reforms, especially during a financial crisis.

### - Limitations and Future Direction:

This paper has some limitations. First, we focused on listed banks in JSE, which may mean that our results are not extendable to other countries or non-financial institutions. Second, our sample is small, because of the size of the South African stock market. Finally, we limited our analysis to the internal corporate governance mechanisms of banks.

Once COVID-19 is over, it is expected that we will have to face a new pandemic, particularly in the context of increasingly frequent natural/biological disasters. We recommend continuing to investigate the financial effects of pandemics on stock markets to maximize the lessons we can learn and to allow the development of more resilient procedures in the face of this type of phenomenon. Other corporate governance mechanisms including external mechanisms should be used to extend the knowledge on the effects of banks' CG practices in the role of monitoring the negative effects of financial crises on stock markets. Future research could also investigate other countries.

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