

Exploring the Association Between Chief Executive Remuneration and Financial Performance: A South African Banking Perspective

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This research aimed to determine whether there is an association between financial performance and chief executive officer (CEO) remuneration when South African banks are sampled. A quantitative research approach was applied using a descriptive research design. The research included a data range spanning over 10 years. Financial data were collected through the Integrated Real-time Equity System (IRESS). Multiple regression testing was performed using the Statistical Package for Social Science (SPSS). Correlation coefficients were measured, and multiple regression models were constructed. This study found that cashflow per share, market price per share and liquidity ratios were often identified as predictors of CEO remuneration. This research contributed to the body of existing knowledge by demonstrating that the remuneration paid to South African bank CEOs can be predicted by means of selected financial ratios. Limitations included that the census was small and only consisted of eight banks in total. This limitation was accommodated by expanding the time frame for data collection.

Keywords: banking sector, CEO remuneration, financial performance, corporate governance, chief executive officers

INTRODUCTION

A firm's direction and control are administered by a set of rules, procedures and processes known as corporate governance (Naciti, Cesaroni & Pulejo, 2021). Corporate governance entails the balancing of interests of various stakeholders, such as shareholders, management, consumers, suppliers, financial institutions, the government and the public (Bebchuk, Cohen & Ferrell, 2019). Accountability, fair treatment of shareholders, self-assessment and increasing shareholder wealth are the four goals of cooperative corporate governance.

As part of good corporate governance practice, an entity's remuneration committee should establish a remuneration policy for its executives (King III Report, 2009). According to Van Wyk and Wesson (2021), a company's financial performance is a key indicator of CEO performance, but from the academic literature,

there seems to be ambiguity with regards to the relationship between CEO remuneration and financial performance. Several previous research papers have pointed out that there is no significant association between CEO remuneration and company performance. Preibing, Southey and Laing (2013) confirmed in their study, that a weak correlation exists between CEO remuneration and financial performance of Australian companies. Keller (2013) sampled American companies and concluded that CEO remuneration did not correlate with company earnings or changes in share price value. In a study by Chang, Dasgupta and Hilary (2010), it was put forward that little empirical evidence points to the fact that CEOs contribute to firm value in a significant manner. Cooper, Gulen and Rau (2010) indicated that larger CEO remuneration packages do not necessarily translate into better future returns for investors. In contrast, studies by Bell and Reenen (2012), Crawford, Nelson and Rountree (2014), Shin, Kang and Hyun (2014) and Faleye, Reis and Venkateswaran (2012) all found positive associations between CEO remuneration and financial performance of entities.

In an international report, McKinsey and Company (2018) posited that Africa's banking sector is the second most profitable in the world, and that it delivers fast growth despite Africa being a developing continent. PriceWaterHouse Coopers (2022) indicated that the South African banking industry is performing well, with an increase of 99% in headline earnings during the 2021 financial year. Credit quality, liquidity and growth are on an upward trajectory (PwC, 2022). Based on the arguments of researchers like Preibing et al. (2013), Keller (2013), Chang et al. (2010) and Cooper et al. (2010), it can be submitted that growth in the banking sector is not necessarily attributable to performance and efforts of CEOs. Researchers such as Posner (2008) have pointed out that large CEO remuneration packages may adversely affect investors' ability to obtain better returns on their investments, while such remuneration packages do not guarantee future benefits to the investor.

From the preceding arguments, it is submitted that the South African banking sector is a growing sector. South African bank CEOs benefit from the banking sector's proliferation by earning large remuneration packages (BusinessTech, 2022). Yet, previous research does not conclusively indicate that there is a strong association between CEO compensation and firm performance. In addition, it can be argued that large remuneration packages constitute a cost to the South African banking investor, due to the absence of evidence that remuneration packages paid to bank CEOs can be justified by means of financial indicators. This research provides a South African perspective on whether the remuneration packages of CEOs of local listed banks are justified, when compared to the financial performance of these banks.

This research aims to determine whether there is an association between financial performance and CEO remuneration, when South African banks are sampled. This objective's outcome will indicate to South African banking investors whether the large investment in CEO remuneration is associated with better financial performance, or whether resources invested in CEO remuneration does not necessarily result in more financial prosperity.

LITERATURE REVIEW AND HYPOTHESES

In this section, supporting literature is presented and used to develop the hypothesis to the study. The section commences with elaborating the determinants of CEO remuneration.

Determinants of CEO remuneration

King III indicates that a framework for managerial performance should be applied to assess the achievement of objectives, including the relative weighting of each performance measure and a description of the performance measures used to assess the fulfilment of aims (King III Report, 2009; Emuron & Yixiang 2020). According to Silingiene, Stukaite and Radvile (2015), such a performance framework consists of internal remuneration determinants, such as employer and employee determinants. Bussin and Modau (2015) add to this view by indicating that organizational measures and CEO attributes should form part of the remuneration framework. Table 1 was constructed as an explanation.

TABLE 1
DETERMINANTS OF CEO REMUNERATION

	Description	Details
INTERNAL FACTORS	CEO attributes	Qualifications, experience, age
	Company determinants	Culture, policy, financial position

Source: Adapted from Silingiene *et al.* (2015); Bussin and Modau (2015)

Table 1 indicates that CEO remuneration is determined by the attributes of the employee (that is: the CEO), as well as the company's own measures. CEO attributes are concerned with concepts such as the employee's qualification, experience or age (Silingiene, Stukaite & Radvile 2015). Company measures mainly refer to the company's culture, financial position and policies (Bussin & Modau 2015).

Kearney (2021) identifies company policy as the key determinant of CEO remuneration, as executive remuneration should be clearly linked to the entity's strategic objectives. Kearney (2021) further suggests that the remuneration committee is obliged to compile a remuneration policy, which encumbers long-term and short-term incentives for CEOs, together with performance expectations. Hansen and Schaltegger (2018) put forward that effective remuneration committees develop forward-looking agendas, focusing on a company's specific value drivers and then using tools and information systems to assist them in monitoring performance based on these specific value drivers. The identified value drivers are key performance indicators (KPIs) (Dincer, Yuksel & Martinez 2019). Van Wyk and Wesson (2021) performed a study to identify the KPIs of Johannesburg stock exchange (JSE) listed firms in South Africa. The overall findings of this research were summarised in Table 2.

TABLE 2
KPIS OF JSE LISTED FIRMS

Key performance indicator	Description
Incorporation of sustainability	This KPI focuses on the fact that long term value creation should not cause damage to the environment and community. Responsibility should be taken for corporate impact, beyond financial repercussion. This places emphasis on social and environmental aspects of the business. A total of 86% of companies sampled considered sustainability as an important KPI.
Integrated reporting	Integrated reporting is concerned with the recognition of interconnections between the entity's financial and non-financial indicators. An integrated report aligns corporate governance, corporate strategy, corporate performance and future projections with one another. Through integrated reporting, it should become apparent that the interest of immediate and broader stakeholders is considered. A total of 76% of sampled companies recognised integrated reporting as an important KPI.
Company financial indicators	Company financial indicators refer to quantitative financial information which expresses the ability of the entity to remain on financial target and to ensure that financial information and performance is comparable among different entities. A total of 100% of sampled companies elected company financial indicators as important KPIs. Specifically, companies most often used return on assets, return on equity, earnings before interest and tax, total assets, sales growth, debt to equity, debt to assets, the price-earnings ratio and economic value added, as KPIs.

Source: Adapted from Van Wyk and Wesson (2021)

From Table 2, it can be observed that all companies sampled by Van Wyk and Wesson (2021) considered financial indicators as import KPIs. To narrow down the scope of this research, par. 2.2, focuses on financial performance and its indicators only.

Financial Performance as a Determinant of CEO Remuneration

Companies can increase shareholder value by improving governance and having boards that focus their time and resources on the most important strategic areas rather than just ensuring compliance. Boards should develop clear agendas and balance scorecards are performance monitors that monitor managerial performance based on these agendas (Nuber, Velte & Horisch, 2020). One of these agendas relate to financial performance of departments, business units or business sections that managers are responsible for. In theory, managers should be rewarded when their department, business unit or business section improves its financial performance (Dincer, Yuksel & Martinez, 2019).

The term financial performance refers to the overall financial health of a firm. Financial performance is an indicator of how effectively a company can utilise resources to generate income (Waddock & Graves, 2019). Financial performance is also used as a broad indicator of a company’s long-term financial stability. Excellent financial performance is usually indicated by expanding revenues, manageable debt and a significant amount of free cash flow. The concept of financial performance is subjective and cannot be estimated by means of a single statistic (Waddock & Graves 2019). According to Correia (2019), financial analysis can be done by means of measuring and monitoring financial ratios. These ratios are demonstrated in Table 3.

**TABLE 3
FINANCIAL RATIOS**

Type of ratio	Profitability ratios	Liquidity ratios	Solvency ratios	Market ratios
Ratio concern	Is the company generating a profit?	Is the company able to satisfy its short-term obligations?	Is the company able to satisfy its long-term obligations?	Is there a link between the company’s dividends, earnings and stock price?

Source: Mapalane (2020)

Table 3 indicates the types of financial ratios and the measurement concern pertaining to each type. From the table, it can be observed that there are four categories to consider. Financial ratios used by analysts and investors to analyse and evaluate a company’s ability to create earnings, are known as profitability ratios. Financial ratios indicate how well a corporation uses its assets to generate profits and returns to shareholders (Bhunia, Mukhuti & Roy 2022). Liquidity ratios evaluate a company’s capacity to pay off its current liabilities when they become due (Roman, Hayibor & Agle 2019). Solvency ratios assess a company’s ability to survive in the long run and repay long-term loans (Molina-Azorin, Claver-Corles, Lopez-Gernerero & Tari 2020). Finally, market analysts and investors utilise market ratios to analyse a company’s real performance in proportion to its market value and if its shares are over- or under-valued.

Due to the presumed link between executive remuneration and financial performance, much previous international research has been dedicated to determining whether remuneration and financial ratios are statistically and significantly related. Ruparelia and Njuguna (2016) performed a Kenyan study. They found a significant relationship between dividend yield and board remuneration, but no significant relationship existed between return on assets and remuneration, return on equity and remuneration and EPS and remuneration. From this study, a selected market ratio could predict CEO remuneration.

Similarly, Kirsten and Du Toit (2018) intended to determine whether managers are driven if they feel that investing more labor will lead to good results and that good results will lead to desired rewards. According to the data, CEO's remuneration has a considerable beneficial impact on bank financial performance, but chairman compensation and the large remunerations paid to directors hurt bank financial success. This study applied profitability ratios and liquidity ratios as financial performance measures. Ibrahim, Zin, Kassim and Tamsir (2019) contemplated the link between director salaries, board size and business performance of Malaysian companies operating in the telecommunications sector. The findings suggest that the relationship between directors' compensation and firm performance is contrary. Directors did not perform better in the future, based on structures and values of remuneration packages. Kostyuk and Barros (2018) investigated the influence of corporate governance procedures and financial performance of Portugal listed Companies. The findings of this study concluded that the ownership structure, together with the separation of CEO and Chairman roles and variable compensation based on performance, proved to be the most significant mechanisms in the improving the company performance. Noja, Jurcut, Buglea and Popa (2020) intended to explore the relationship between board and executive management compensation and the financial performance of European companies from various industries in a development framework. The main results indicate that management financial incentives/packages correlate positively and significantly with the performance of European firms, leading to important rises in firm value and company earnings. Moreover, the sustainability indicators (committee and policy) also positively affect financial performance. In the studies by Ibrahim, Zin, Kassim, and Tamsir (2019) and Kostyuk, Barros (2018) and Noja, Jurcut, Buglea and Popa (2020), financial performance was quantified by means of profitability and market ratios.

H1: Market ratios can predict CEO remuneration

H2: Profitability ratios can predict CEO remuneration

Handa (2019) explored the influence of board arrangements on the financial performance of banks in India. The study established that CEO duality, average compensation of directors, board committees and female directors as significant influencers of bank performance. Handa (2019) expressed financial performance in quantitative terms, by means of liquidity and solvency ratios. In addition, Chatterjee, Jia, Nguyen, Taylor and Duong (2023) found that financial distress impacts CEO remuneration negatively. The researchers measured financial performance by means of liquidity ratios.

H3: Solvency ratios can predict CEO remuneration

H4: Liquidity ratios can predict CEO remuneration

In the next section, the research design and methodology of the study is discussed in detail.

RESEARCH METHODOLOGY

This research design is quantitative in nature. The longitudinal study aimed to collect secondary empirical data over a 10-year span. The population of the study consisted of JSE listed banks. The names of these banks are displayed in Table 4.

TABLE 4
POPULATION TO THE STUDY

Name of the South African bank
ABSA Bank Ltd
Bidvest Ltd
Capitec Bank Ltd
Discovery Bank Ltd
FirstRand Bank Ltd
Investec Bank Ltd
Nedbank Bank Ltd
Standard Bank Ltd

Source: South African Reserve Bank (2020)

JSE listed banks are selected as population for the following reasons:

- Listed banks are required to publish their financial information publicly (JSE, 2022). Consequently, financial data is easily accessible without privacy barriers;
- Listed banks are required to undertake annual financial audits (JSE, 2022). This contributes to the accuracy and reliability of data, when included for statistical testing; and
- The financial ratios for listed banks are published by IRESS, ensuring comparable financial indicators are available for statistical testing (IRESS, 2022).

The population of this study is small. For this reason, sampling was not applied, and a census was conducted. A census refers to circumstances where all population elements are included for testing (Creswell, 2014). The Bureau of Statistics (2021) described a ‘census’ as circumstances where research conclusions are drawn from the entire population. Thus, all banks included in the population as per Table 5, were included for statistical testing. It should be noted that in a previous study by Foggitt, Heymans, Van Vuuren and Pretorius (2017), the same banks were selected as the sample to test another phenomenon. In addition, Meher and Getaneh (2019) and Klaassen (2020) have used small, similar samples to test financial phenomena.

Data Collection and Timeframe

The nature of this research necessitates the collection of two different sets of data:

- Data relating to financial performance (i.e. financial ratios); and
- Data relating to CEO remuneration packages.

For the purpose of financial ratios, ratios on profitability, liquidity, solvency and market returns were collected. This is in line with data collection approaches followed by other researchers, as demonstrated by the hypothesis development. Data relating to the financial ratios were retrieved from the IRESS. For the purpose of data collection relating to CEO remuneration, data were also gathered from IRESS. Laurin (2022) indicates that IRESS is a recognised database for research.

As it relates to this study, data were collected for 10 years, from 2012 to 2021. A period of 10 years is selected for the following reasons:

- As only eight listed banks are included for testing, the number of years of data collection is increased to ensure that the data scope is not entirely limited;
- A decade of data allows for proper analysis of trends. This research period is suggested by researchers such as Creswell (2014:104) and Mouton (2013:87).

Statistical Analysis

For the purpose of this study, statistical analysis was used to explore the association between chief executive remuneration and financial performance. For statistical analysis execution, the Statistical Package for the Social Sciences (SPSS) software package (version 27.0) was employed. Correlation analysis and

multiple-regression analysis was applied, to observe if any number of independent variables (financial ratios) can be organised into a regression formation to estimate CEO remuneration (dependent variable).

RESEARCH RESULTS

This section aims to display the statistical findings as it relates to correlational testing and multiple regression analysis. It should be noted that all available profitability, liquidity, solvency and market value ratios were obtained from IRESS. Only statistically significant relationships were reported on. For the purpose of this paper, a margin of error of 5% is accepted. This means that a 95% confidence interval is adopted for statistical testing. This adoption was applied via setting selection on SPSS. The statistical adoption of a 5% error margin is endorsed by Illowsky and Dean (2017), who put forward that researchers should execute quantifications prudently and that all statistical measures will realistically contain some probability for error

Correlational testing was executed by means of measuring a Pearson correlation co-efficient. The correlation coefficient is represented by ‘r’ and results are interpreted as (Pallant 2013):

- $r \leq 0.3$, is a small effect;
- $0.3 \leq r \leq 0.5$, represents a medium impact
- $r \geq 0.5$, represents a large impact.

Multiple regression analysis was applied through the ‘stepwise testing’ function on SPSS. This function tests all possible combinations of independent variables to identify the combination that best approximates the dependent variable. This process also eliminates multicollinearity automatically. In the analysis to follow, each bank was analysed separately. Analysis was sequenced in alphabetical order, based on the bank’s name. This section commences with an analysis of ABSA Bank Ltd.

Table 5 displays the correlation coefficients generated for ABSA Bank Ltd, by SPSS. The table indicates the Pearson correlation coefficient (r), the number of observations (N) and the R-squared (R²).

**TABLE 5
CORRELATION RESULTS - ABSA BANK LTD**

	CEO REMUNERATION		
	R	N	R ²
Cash flow per share	-0.788	10	0.621
Cash flow/dividend cover	-0.687	10	0.471
Operating profit/employee	0.669	10	0.448
Price/cash flow	-0.848	10	0.719

From Table 5, it can be observed that there is a strong negative correlation between CEO remuneration and cash flow/share, where $r = -0.788$, $N = 10$ and $p < 0.05$. Cash flow per share could predict up to 62% of changes in CEO remuneration (i.e. $R^2 = 0.621$). A strong, negative association was uncovered between cash flow dividend cover and CEO remuneration, where $r = -0.687$, $N = 10$ and $p < 0.05$. Per R^2 , cash flow/dividend cover can predict up to 47% of changes in CEO remuneration.

Operating profit/employee and CEO remuneration were strongly and positively associated with each other, as $r = 0.669$, $N = 10$ and $p < 0.05$. R^2 indicated that up to 48% of changes in CEO remuneration can be attributed to operating/employee. Price/cash flow was negative and strongly associated with CEO remuneration. Table 4.2 indicates that $r = -0.848$, $N = 10$ and $p < 0.05$. $R^2 = 0.19$, indicating that up to 73% of changes in CEO remuneration, can be attributed to price/cash flow.

All variables listed in Table 5 correlated strongly and negatively with CEO remuneration, except for operating profit/employee, which correlated positively and strongly with CEO remuneration.

TABLE 6
MULTIPLE REGRESSION OUTPUT FOR ABSA BANK LTD

Model for CEO remuneration – ABSA Bank Ltd			
R²		0.782	
Standard error (SE)		4167.988	
F ratio		25.145	
Significance value (sig)		0.002	
Degrees of freedom (df)		1;7	
Independent variable	Unstandardised beta	t value	P value
Constant	61423.718	8.569	0.000
Cash flow/share	-13.771	-5.014	0.002

From Table 6, the multiple regression model estimated for ABSA Bank Ltd can predict 78,2% of changes in CEO remuneration, by means of cash flow per share and an estimated constant (SE = 4167.988). The F ratio indicates that $F(1;7) = 25.145$, while the significance (p) is 0.002. This model is a good fit for data, as p is smaller as 0.05. $T = -5,014$, which is in line with the benchmark of $T < -2$. The multiple regression model express CEO remuneration as:

$$CEO\ remuneration_{(ABSA)} = 61423.718 + 603.673(X_1) + 0,513(X_2)$$

Table 7 summarises correlation findings. The table displays the correlation co-efficient (r), number of observations (N) and r-squared (R^2).

TABLE 7
CORRELATION RESULTS - BIDVEST LTD

	CEO REMUNERATION		
	R	N	R ²
Cash flow per share	0.586	10	0.343
Price/cash flow	0.389	10	0.151
Quick ratio	-0.635	10	0.403
Return on equity%	0.567	10	0.321
Net profit margin%	0.583	10	0.340

From Table 7, it can be observed that there is a strong positive correlation between CEO remuneration and cash flow per share, where $r = 0.586$, $N = 10$ and $p < 0.05$. Cash flow/share could predict up to 34% of changes in CEO remuneration (i.e. $R^2 = 0.343$). A positive association was uncovered between price/cash flow and CEO remuneration, where $r = -0.389$, $N = 10$ and $p < 0.05$. Per R^2 , price/cash flow can predict up to 15% of changes in CEO remuneration (i.e. $R^2 = 0.151$).

Quick ratio and CEO remuneration were strongly and negatively associated with each other, as $r = -0.635$, $N = 10$ and $p < 0.05$. R^2 indicated that up to 43% of changes in CEO remuneration can be attributed to quick ratio. Return on equity was positively and strongly associated with CEO remuneration. Table 4.5 indicates that $r = 0.567$, $N = 10$ and $p < 0.05$. $R^2 = 0.321$, indicating that up to 32% of CEO remuneration changes can be attributed to return on equity. Lastly, the net profit margin correlated strongly and positively with CEO remuneration, as $r = 0.583$, $N = 10$, $p < 0.05$ and $R = 0.340$. Similarly, net profit margin also correlated positively and strongly with CEO remuneration.

TABLE 8
MULTIPLE REGRESSION OUTPUT FOR BIDVEST LTD

Model for CEO remuneration – Bidvest Ltd			
R ²		0.691	
Standard error (SE)		3021.692	
F ratio		7.823	
Significance value (sig)		0.016	
Degrees of freedom (df)		2;7	
Independent variable	Unstandardised beta	t value	P value
Constant	60766.609	3.881	0.006
Quick ratio	-55471.293	-2.822	0.026
Net profit margin%	211.853	0.538	0.038

According to Table 8, R² = 0.691 and SE = 3021.692, the model for CEO remuneration can anticipate 69% of changes in CEO remuneration. With F(2;7) = 7.823, p 0.005, the F ratio and its significance value (Sig.) show that the multiple regression model provides a generally good fit for the data. This shows that the model can accurately predict CEO remuneration, as p = 0.016, which is lower than the usual 0.05 cut-off. T-values fall in the permissible range of t > 2, which is between -2.822 and 3.881. The following is an illustration of the multiple regression model:

$$CEO\ remuneration_{(Bidvest)} = 60766.609 + 55471.293(X_1) + 211.853(X_2)$$

Where X₁ represents total quick ratio; and
X₂ represents net profit margin

Table 9 displays only significant correlations generated through correlational testing. The correlation coefficient (r), the number of observations (N) and the probability value (p) are displayed.

TABLE 9
CORRELATION RESULTS – CAPITEC BANK LTD

	CEO REMUNERATION		
	R	N	R²
Cash flow per share	0.823	10	0.677
Earnings/share	0.869	10	0.755
Leverage factor	-0.813	10	0.661
Price/book value	0.845	10	0.714
Price/share	0.868	10	0.753
Return on assets%	0.905	10	0.819

As per Table 9, cash flow per share had a substantial and positive correlation (r = 0.823, N = 10, p < 0.05 and R² = 0.677) with CEO remuneration. Similarly, earnings per share also showed a positive and significant correlation with CEO remuneration. r = 0.869, N = 10, and p < 0.05 for earnings per share and CEO remuneration. According to R², earnings per share can predict up to 76% of changes in CEO remuneration.

According to Table 9, where r = -0.813, N = 10, and p < 0.05 indicate a significant negative association, CEO remuneration and leverage factor are negatively correlated. According to R² = 0,661, the leverage factor might predict up to 66% of changes in CEO remuneration. Price/book value and CEO remuneration

were strongly positively correlated, with $r = 0.845$, $N = 10$, and $p < 0.05$ being the correlation coefficient. According to R^2 , price/book value can predict up to 71% of changes in CEO remuneration.

Price/share and CEO remuneration had a substantial positive correlation ($r = 0.868$, $N = 10$, and $p < 0.05$). Up to 75% of variations in CEO remuneration, according to R^2 , can be related to price/share. Return on assets was highly and positively correlated with CEO remuneration. According to Table 9, $r = 0.905$, $N = 10$, and $p < 0.05$ are all true. Up to 82% of variations in CEO remuneration, according to $R^2 = 0.819$, can be linked to return on assets movements.

Except for leverage factors, which were substantially and adversely linked with CEO remuneration, all of the variables included in Table 9 had strong and positive correlations with it.

TABLE 10
MULTIPLE REGRESSION OUTPUT FOR CAPITEC BANK LTD

Model for CEO remuneration – Capitec Bank Ltd			
R ²		0.818	
Standard error (SE)		14722.885	
F ratio		36.066	
Significance value (sig)		0.000	
Degrees of freedom (df)		1;8	
Independent variable	Unstandardised beta	t value	P value
Constant	112654.331	8.020	0.000
Return on assets%	11823.463	6.005	0.000

In accordance with Table 10, the model for CEO remuneration can anticipate 82% of changes in CEO remuneration, with $R^2 = 0.818$ and $SE = 14722.885$. The multiple regression model provides an overall strong fit for the data, as shown by the F ratio and its significance value (Sig.), $F(1;8) = 36.066$, $p < 0.05$. As $p = 0.001$, which is lower than the usual benchmark of 0.05, it can be concluded that the model can accurately forecast CEO remuneration. The acceptable criterion of $t > 2$ is met by the T-values, which range between 6.005 and 8.020. You may write the multiple regression model as follows:

$$CEO\ remuneration_{(capitec)} = 112654.331 + 11823.463(X_1)$$

where X_1 represents return on assets

Table 11 displays only significant correlations generated through correlational testing. The Pearson correlation coefficient (r), the number of observations (N) and the probability value (p) is displayed.

TABLE 11
CORRELATION RESULTS – DISCOVERY BANK LTD

	CEO REMUNERATION		
	R	N	R ²
Book value/share	0.720	10	0.518
Debt/assets	-0.743	10	0.552
Debt/equity	0.699	10	0.489
Dividend per share	0.793	10	0.629
NAV per share	0.719	10	0.517
Price/share	0.855	10	0.731
Total debt/cash flow	0.864	10	0.746

From Table 11, it can be observed that there is a strong positive correlation between CEO remuneration and book value/share, where $r = 0.720$, $N = 10$ and $p < 0.05$. Book value/share could predict up to 52% of changes in CEO remuneration (i.e. $R^2 = 0.518$). A strong, negative association was uncovered between debt/assets and CEO remuneration, where $r = -0.743$, $N = 10$ and $p < 0.05$. Per R^2 , debt/assets can predict up to 55% of changes in CEO remuneration. Debt/equity correlated strongly and positively with CEO remuneration, as $r = 0.699$, $N = 10$, $p < 0.05$ and $R = 0.489$. Similarly, dividends per share correlate positively and strongly with CEO remuneration. For dividends/share and CEO remuneration, $r = 0.793$, $N = 10$ and $p < 0.05$. Per R^2 , dividends/share can predict up to 63% of changes in CEO remuneration.

NAV per share and CEO remuneration were strongly associated with each other, as $r = 0.719$, $N = 10$ and $p < 0.05$. R^2 indicated that up to 52% of changes in CEO remuneration can be attributed to NAV/share. Price/share was positively and strongly associated with CEO remuneration. Table 4.11 indicates that $r = 0.855$, $N = 10$ and $p < 0.05$. $R^2 = 0.731$, indicating that up to 73% of changes in CEO remuneration, can be attributed to price/share. Lastly, total debt/cash flow was strongly and positively associated with CEO remuneration, where $r = 0.864$, $N = 10$ and $p < 0.05$. R^2 demonstrated that up to 75% of changes in CEO remuneration can be predicted by means of total debt/cash flow.

All variables listed in Table 11 correlated strongly and positively with CEO remuneration, except debt/assets, which correlated negatively and strongly with CEO remuneration.

TABLE 12
MULTIPLE REGRESSION OUTPUTS FOR DISCOVERY BANK LTD

Model for CEO remuneration – Discovery Bank Ltd			
R ²		0.898	
Standard error (SE)		1173.475	
F ratio		26.465	
Significance value (sig)		0.001	
Degrees of freedom (df)		2;6	
Independent variable	Unstandardised beta	t value	P value
Constant	6194.658	4.127	0.006
Total debt/cash flow	603.673	3.282	0.017
Price/share	0.513	3.107	0.021

Table 12 indicates that the model for CEO remuneration can predict 90% of changes in in CEO remuneration, where $R^2 = 0.898$ and $SE = 1173.475$. The F ratio, together with its significance value (Sig.), demonstrates that the multiple regression model is an overall good fit for the data, with $F(2;6) = 26.465$, $p < 0.005$. This indicates that the model can reliably estimate CEO remuneration, as $p = 0.001$, which is smaller than the general benchmark of 0.05. T-values range between 3.107 and 4.127, which is within the acceptable benchmark of $t > 2$ (Reid, 2013). The multiple regression model can be expressed as:

$$CEO\ remuneration_{(Discovery)} = 6194.658 + 603.673(X_1) + 0,513(X_2)$$

where X_1 represents total debt/cash flow and X_2 represents price/share.

The correlation analysis of FirstRand Group Ltd is summarised in Table 13. It displays the correlation coefficient (r); the number of observations and the R-squared (R^2).

TABLE 13
CORRELATION RESULTS - FIRSTRAND GROUP LTD

	CEO REMUNERATION		
	R	N	R ²
Cash flow/dividend cover	-0.809	10	0.654
Current ratio	-0.845	10	0.714
Dividend per share	0.759	10	0.576
Earnings per share	0.793	10	0.629
Quick ratio	-0.845	10	0.714
Price/share	-0.661	10	0.437

Cash flow/dividend cover and CEO remuneration and strongly were negatively associated with each other, as $r = -0.809$, $N = 10$ and $p < 0.05$. R^2 indicated that up to 65% of changes in CEO remuneration can be attributed to cash flow dividend cover. From Table 13, it can be observed that there is a strong negative correlation between CEO remuneration and current ratio, where $r = -0.845$, $N = 10$ and $p < 0.05$. Cash flow/share could predict up to 71% of changes in CEO remuneration (i.e. $R^2 = 0,714$).

A strong, positive association was uncovered between dividend per share and CEO remuneration, where $r = -0,759$, $N = 10$ and $p < 0.05$. Per R^2 , dividend share can predict up to 58% of changes in CEO remuneration. Earnings per share and CEO remuneration were strongly associated with each other, as $r = 0,793$, $N = 10$ and $p < 0.05$. R^2 indicated that up to 63% of changes in CEO remuneration can be attributed to earnings/share. Table 13 indicates that $r = -0,845$, $N = 10$ and $p < 0.05$. $R^2 = 0.714$, indicating that up to 71% of changes in CEO remuneration, can be attributed to quick ratio. Lastly price/share correlated strongly and negatively with CEO remuneration, as $r = -0.661$, $N = 10$, $p < 0.05$ and $R = 0.437$. Up to 44% of changes in CEO remuneration can be predicted by price/share. With the exception of dividend/share and earnings/share, which strongly and positively linked with CEO remuneration, all of the variables included in Table 13 had strong and negative correlations with each other.

TABLE 14
MULTIPLE REGRESSION OUTPUTS FOR FIRSTRAND BANK LTD

Model for CEO remuneration – FirstRand Bank Ltd			
R ²		0.715	
Standard error (SE)		3910.598	
F ratio		26.023	
Significance value (sig)		0.002	
Degrees of freedom (df)		1;8	
Independent variable	Unstandardised beta	t value	P value
Constant	52969.720	19.851	0.000
Current ratio	-40077.728	-4.475	0.002

Table 14 shows that the model for CEO remuneration can predict 72% of changes in CEO remuneration, with $R^2 = 0.715$ and $SE = 3910.598$. The F ratio and its significance value (Sig.) demonstrate that the multiple regression model offers a generally good fit for the data with $F(1;8) = 26.023$, $p < 0.005$. This demonstrates that the model can correctly forecast CEO remuneration, as indicated by the fact that the result, $p = 0.002$, is lower than the typical cut-off of 0.05. The acceptable range for the t-value is $t > 2$ or $t < -2$. Per the table, t-values are between -4.475 and 19.852. The multiple regression model is demonstrated by the following:

$$CEO\ remuneration_{(Firstrand)} = 52969.720 + 40077.728(X_1)$$

where X_1 represents the current ratio.

Table 15 displays only significant correlations generated through correlational testing. The correlation coefficient (r), the number of observations (N), and the probability value (p) are displayed.

TABLE 15
CORRELATION RESULTS – INVESTEC BANK LTD

	CEO REMUNERATION		
	R	N	R ²
Dividend per share	0.766	10	0.587
Earnings per share	-0.046	10	0.552
Price/book value	0.792	10	0.627
Price/cash flow	0.817	10	0.667
Price/share	0.904	10	0.817
Return on assets%	0.732	10	0.536

Table 15 indicates a strong, positive association between dividend per share and CEO remuneration, where $r = 0.766$, $N = 10$ and $p < 0.05$. Per R^2 , dividend share can predict up to 59% of changes in CEO remuneration. Earnings per share and CEO remuneration and strongly were negatively associated with each other, as $r = -0.046$, $N = 10$ and $p < 0.05$. R^2 indicated that up to 52% of changes in CEO remuneration can be attributed to earnings/share. Price/book value correlated strongly and positively with CEO remuneration, as $r = 0.792$, $N = 10$, $p < 0.05$ and $R^2 = 0.627$. Similarly, price/cash flow also correlated positively and strongly with CEO remuneration. For dividends/share and CEO remuneration, $r = 0.904$, $N = 10$ and $p < 0.05$. Per R^2 , price/cash flow can predict up to 67% of changes in CEO remuneration.

Price/share and CEO remuneration had a substantial positive correlation ($r = 0.904$, $N = 10$, and $p < 0.05$). Up to 82% of variations in CEO remuneration, according to R^2 , can be related to price/share. Return on assets was highly and positively correlated with CEO remuneration. According to Table 4.17, $r = 0.732$, $N = 10$, and $p < 0.05$ are all true. Up to 54% of variations in CEO remuneration, according to $R^2 = 0.536$, can be linked to return on assets movements. Except for earnings/share, which had a substantial negative correlation with CEO remuneration, every factor indicated in Table 15 had a strong positive correlation with CEO remuneration.

TABLE 16
MULTIPLE REGRESSION OUTPUTS FOR INVESTEC BANK LTD

Model for CEO remuneration – Investec Bank Ltd			
R²	0.817		
Standard error (SE)	535.613		
F ratio	35.765		
Significance value (sig)	0.000		
Degrees of freedom (df)	1;8		
Independent variable	Unstandardised beta	t value	P value
Constant	-689.899	-1.231	0.025
Price/share	0.411	5.980	0.000

According to Table 16, the model for CEO remuneration can anticipate 82% of changes in CEO remuneration, with $R^2 = 0.817$ and $SE = 535.613$. The multiple regression model provides an overall strong

fit for the data, as shown by the F ratio and its significance value (Sig.), $F(1;8) = 35.765$, $p < 0.05$. As $p = 0.000$, which is lower than the usual benchmark of 0.05, it can be concluded that the model can accurately forecast CEO compensation. The T-values meet the acceptable criterion of $t > 2$, which range between -0,231 and 5.980. You may write the multiple regression model as follows:

$$CEO\ remuneration_{(Investec)} = 689.899 + 0.411(X_1)$$

where X_1 represents price/share.

Table 17 displays the number of observations (N), probability (p), and Pearson correlation coefficient (r) are all displayed.

TABLE 17
CORRELATION RESULTS – NEDBANK LTD

	CEO REMUNERATION		
	R	N	R ²
Book value/share	0.673	10	0.453
Cash flow per share	0.541	10	0.293
Dividend per share	0.533	10	0.284
NAV per share	0.726	10	0.527
Return on assets%	-0.726	10	0.527
Operating profit/employee	0.528	10	0.279

From Table 17, it can be observed that there is a strong positive correlation between CEO remuneration and cash flow per share, where $r = 0.541$, $N = 10$ and $p < 0.05$. Cash flow per share could predict up to 29% of changes in CEO remuneration (i.e. $R^2 = 0.293$). A positive association was uncovered between dividend per share and CEO remuneration, where $r = -0.533$, $N = 10$ and $p < 0.05$. Per R^2 , dividend/share flow can predict up to 28% of changes in CEO remuneration (i.e. $R^2 = 0.284$).

NAV per share and CEO remuneration revealed a strong positive link with one another ($r = 0.726$, $N = 10$, and $p < 0.05$). According to R^2 , NAV/share can explain up to 53% of variances in CEO remuneration. The relationship between return on assets and CEO remuneration was strong and negative. Table 17 shows that $r = -0.26$, $N = 10$, and $p < 0.05$ are all valid values. $R^2 = 0.527$ indicates that differences in return on assets can explain up to 53% of changes in CEO compensation.

Last, CEO remuneration was significantly and favourably correlated with operating profit/employee ($r = 0.528$, $N = 10$ and $p < 0.05$). According to R^2 , operating profit/employee can be used to predict up to 28% of changes in CEO remuneration. With the exception of return on assets, which was substantially and adversely linked with CEO remuneration, all of the variables included in Table 17 had strong and positive correlations with each other.

Table 18 indicates that the model for CEO remuneration can predict 58% of changes in in CEO remuneration, where $R^2 = 0.576$ and $SE = 5329.638$. The F ratio, together with its significance value (Sig.), demonstrates that the multiple regression model is an overall good fit for the data, with $F(1;8) = 6,361$, $p < 0.05$. This indicates that the model can reliably estimate CEO remuneration, as $p = 0.04$, which is smaller than the general benchmark of 0.05. T-values range between 0.440 and 2.522, which is within the acceptable benchmark of $t > 2$.

TABLE 18
MULTIPLE REGRESSION OUTPUTS FOR NEDBANK LTD

Model for CEO remuneration – Nedbank Ltd			
R ²		0.576	
Standard error (SE)		5329.638	
F ratio		6.361	
Significance value (sig)		0.040	
Degrees of freedom (df)		1;8	
Independent variable	Unstandardised beta	t value	P value
Constant	4934.098	0.440	0.047
Cash flow/share	6,.740	2.522	0.043

The multiple regression model can be expressed as:

$$CEO\ remuneration_{(Nedbank)} = 4934.098 + 6.740(X_1)$$

where X₁ represents cash flow/share.

Table 19 shows only correlations that pass the correlational tests as significant. The display includes the probability value (p), the number of observations (N), and the Pearson correlation coefficient (r).

TABLE 19
CORRELATION RESULTS – STANDARD BANK LTD

	CEO REMUNERATION		
	R	N	R ²
Book value/share	0.703	10	0.494
Current ratio	-0.899	10	0.790
Dividend per share	0.654	10	0.427
Earnings per share	0.846	10	0.716
NAV per share	0.710	10	0.504
Price share	0.820	10	0.672
Quick ratio	-0.889	10	0.790

Source: Author

According to Table 19, r = 0.703, N = 10, p < 0.05 and R² = 0.494, indicating that book value/share had a substantial and positive correlation with CEO remuneration. Other results showed that current ratio and CEO remuneration had a negative and significant correlation. Current ratio and CEO remuneration have r = -0.899, N = 10, and p < 0.05 values. Current ratio, according to R², can anticipate up to 79% of changes in CEO remuneration.

As further observed in Table 19, there is a significant positive association between CEO remuneration and book dividend per share, with r = 0.654, N = 10, and p < 0.05. Up to 43% of changes in CEO remuneration may be predicted by dividend per share (R²= 0,427). Earnings share and CEO remuneration were found to have a high, favourable correlation (r = -0.846, N = 10, p < 0.05) with each other. Earnings per share can forecast up to 72% of changes in CEO remuneration, according to R².

NAV per share and CEO remuneration had a high positive correlation (r = 0,710) with 10 participants and a p-value of less than 0.05. According to R², NAV/share can account for up to 71% of variations in CEO remuneration. CEO remuneration was highly and positively correlated with price/share, r = 0.820, N = 10, and p < 0.05 are shown in Table 19. R²= 0.672 indicates that price/share can explain up to 67% of

fluctuations in CEO remuneration. Finally, quick ratio had a substantial and unfavourable correlation ($r = -0,899$, $N = 10$ and $p < 0.05$) with CEO remuneration. According to R^2 , the quick ratio can accurately forecast up to 79% of changes in CEO remuneration. Except for current ratio and quick ratio, which associated adversely and significantly with CEO remuneration, all of the variables indicated in Table 19 were highly and positively connected to CEO remuneration overall.

TABLE 20
MULTIPLE REGRESSION OUTPUTS FOR STANDARD BANK LTD

Model for CEO remuneration – Standard bank			
R ²	0.910		
Standard error (SE)	454.548		
F ratio	35.433		
Significance value (sig)	0.000		
Degrees of freedom (df)	2;7		
Independent variable	Unstandardised beta	t value	P value
Constant	70044.775	2.072	0.000
Current ratio	-5631.320	-4.300	0.004
Price/share	2.175	2.825	0.026

Table 20 indicates that the model for CEO remuneration can predict 91% of changes in in CEO remuneration, where $R^2 = 0.910$ and $SE = 454.548$. The F ratio, together with its significance value (Sig.), demonstrates that the multiple regression model is an overall good fit for the data, with $F(2;7) = 35.433$, $p < 0.005$. This indicates that the model can reliably estimate CEO remuneration, as $p = 0.001$, which is smaller than the general benchmark of 0.05. T-values range between 2.072 and 4.300, which is within the acceptable benchmark of $t > 2$. The multiple regression model can be expressed as:

$$CEO\ remuneration_{(Standard\ Bank)} = 70044.775 - 5631.320(X_1) + 2.175(X_2)$$

where X_1 represents current ratio; and
 X_2 represents price/share.

To summarise and interpret the empirical findings presented earlier in this chapter, Table 4.25 was constructed.

Table 21 provides a summary of financial ratios which proved to have the best predictive ability when estimating total CEO remuneration, for the banks which were included in the census. The purpose the tabled summary is to identify patterns within the empirical findings.

TABLE 21
SUMMARY OF EMPIRICAL RESULTS

Bank name	Predictive ratio(s)	Ratio category
ABSA Bank Ltd	Cash flow/share	Liquidity ratio
Bidvest Ltd	Quick ratio	Liquidity ratio
	Net profit margin	Profitability ratio
Capitec Bank Ltd	Return on assets	Profitability ratio

Bank name	Predictive ratio(s)	Ratio category
Discovery Bank Ltd	Total debt/cash flow	Solvency ratio
	Price/share	Market ratio
FirstRand Group Ltd	Current ratio	Liquidity ratio
Investec Bank Ltd	Price/share	Market ratio
Nedbank Ltd	Cash flow/share	Liquidity ratio
Standard Bank Ltd	Current ratio	Liquidity ratio
	Price/share	Market ratio

Table 21 indicates the name of companies included in the census and the predictive ratio(s), which were able to estimate the value of chief executive remuneration packages. From the findings tabled in Table 21, it can be put forward that liquidity measures (i.e. current ratio, quick ratio and cash flow per share) and the market price per share, were most often identified as variables that can predict CEO remuneration of listed banks. To a smaller degree, profitability measures in the form of the net profit margin and return on assets also had predictive value, when estimating CEO remuneration.

When placing these findings in theoretical context, it can be posited that the link between liquidity and CEO remuneration is supported by Kirsten and Du Toit (2018) and Handa (2019). Both these studies indicated that liquidity is positively related to CEO remuneration. It should be noted, that the relationship between liquidity and CEO remuneration is not universal, as Jayaraman and Milbourn (2012) and Khan (2023) found an inverse relationship between liquidity measures and CEO compensation.

As it relates to the developed hypotheses, H1 is rejected. Findings listed in Table 21 indicate that share price was often a predictor of CEO remuneration for South African banks, but that this is the only market related measurement that presented itself as a predictor. H2 is rejected as well, since only two different profitability ratios for two different banks were identified as predictors of CEO remuneration.

H3 is rejected as well. Only one solvency ratio served as a predictor of CEO remuneration of Discovery Bank Ltd. Interestingly, this ratio also contained a component of liquidity (cash flow) and it may be argued that the cash flow component possibly contributed to the correlation measurement. H4 is accepted. Liquidity ratios were predictors of CEO remuneration, for five of the eight banks sampled, over a ten-year period. Predictors were found in the form of the current and quick ratio, and cash flow per share.

CONCLUSION

The aim of this paper was to determine whether there is an association between financial performance and CEO remuneration, when data of South African banks are statistically analysed. This study found that for listed South African banks, there is an association between liquidity measures and CEO remuneration, as well as price per share and CEO remuneration. This indicates that CEO remuneration, liquidity and share price move in the same direction. From this finding, it may be posited that remuneration packages paid to CEO do not adversely affect the ability to reward investors, as liquidity measures are indicative of free cash flow, that can be distributed to shareholders in the form of dividends. In addition, the relationship between CEO remuneration and price per share is indicative of the fact that labour inputs of CEOs may give rise to the creation of shareholders wealth, which leaves the investor better-off in the long run.

As the number of companies included for testing was limited to eight listed South African banks, the findings contained in this paper are not generalizable. Further research can be conducted to expand the sample to non-listed banks to observe whether similar trends exist when non-listed entities are sampled. In addition, the research methodology contained in this paper can be mimicked, to perform similar testing within other economic sectors.

Finally, it can be said that this paper has delivered statistical support to the fact that an association exists between CEO remuneration and financial performance in terms of liquidity and share price. To an extent, the payment of large remuneration packages to CEOs, can be upheld, as it seems that the rewards paid to CEOs also generate rewards to shareholders.

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