





# Relationship between black ownership, capital structure and company performance



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## Dates:

Received: 25 Oct. 2021  
 Accepted: 25 Apr. 2022  
 Published: 04 July 2022

## How to cite this article:

Dube, T., Brummer, L.M., Hall, J.H. & Mvita, M.F., 2022, 'Relationship between black ownership, capital structure and company performance', *South African Journal of Economic and Management Sciences* 25(1), a4419. <https://doi.org/10.4102/sajems.v25i1.4419>

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**Background:** The notion that a company's ownership structure may affect performance and capital structure has been the attraction, but few studies have looked at the effect of black ownership (BO).

**Aim:** This paper contributes to the literature by examining the possible interactions between BO, performance, and capital structure. Within an agency cost framework, the study indicated that the distribution of equity ownership among black shareholders might significantly influence the performance and leverage of companies listed on the Johannesburg Stock Exchange (JSE).

**Setting:** Altogether 187 companies on the JSE were selected for the period of 2007 to 2014.

**Method:** Data on the sampled companies were sourced from the Iress database, a prominent source of financial data in South Africa, as well as annual reports. The research used a pooled fixed-effects model, random effects model and two-step generalised method of moments in the analysis.

**Results:** The findings of the research provided support for the agency cost theory. The empirical findings indicated that BO was negatively correlated with debt ratio (long-term debt) and performance (Tobin's Q [TQ]). Surprisingly, BO was positively and significantly correlated with return on assets. Finally, the empirical findings indicated that the proportion of long-term debt and total debt based on market value was lower for BO than for total ownership, while TQ was higher for BO than for total ownership. The finding supports the prediction that companies with a relatively small proportion of black ownership cannot support high leverage and high performance

**Conclusion:** Although the introduction of BO by way of government intervention has been partially successful, more can be done to improve the relationship between the proportion of BO, performance and capital structure in a developing economy.

**Keywords:** black ownership; performance; capital structure, direct ownership; agency costs and developing economy.

## Introduction

The effect of ownership structure on a company's capital structure, and therefore on company performance, was suggested for the first time in the agency theory of capital structure (Jensen 1986; Jensen & Meckling 1976). According to this theory, there are at company level conflicting interests between managers and shareholders, generating agency costs (Jensen & Meckling 1976). More specifically, managers tend to prioritise personal gains, such as higher competitive remuneration and job security over the company's overall welfare, as they do not stand to benefit from sharing in the profits. The need for shareholders to monitor the behaviour of these managers result in more agency costs. Employing more debt to restrict funds available to managers is one strategy an organization may use to minimise managers' inappropriate behaviour (Jensen 1986). Berger and Di Patti (2006) indicate that a high debt ratio forces managers to act in the best interests of the shareholders.

The relationship between firm ownership structure and performance continues to attract the attention of scholars in the financial field (Aluchna & Kaminski 2017). Previously, studies focused on ownership distribution and relationships between principals and agents, as illustrated in the conflict between shareholders and managers (Aluchna & Kaminski 2017; Coles, Lemmon & Meschke 2012; Kumar & Zattoni 2014). Subsequently, apart from the effect of a controlling shareholder and multiple large shareholders (Jara-Bertin, López-Iturriaga & López-de-Foronda

2008; Maury & Pajuste 2005), researchers dealt with the matters of concentrated ownership and concentrated control ownership (Aluchna & Kaminski 2017; Hilli, Laussel & Van Long 2013; Krivogorsky & Burton 2012; Jara-Bertin et al. 2008; Maury & Pajuste 2005) on company performance. In addition, the principal-principal conflicts have been indicated and highlighted in research on shareholders' differences and their conflicting expectations in developing economies (Su, Xu, & Phan 2008; Young et al. 2008).

It is worth pointing out that the classification of black ownership (BO), defined in this study as ownership by black ethnic individuals, is unique to this study and is important in the South African context. Increasing BO in the economy's private sector is government policy, instituted to redress the racial imbalances that existed prior to the country becoming a democracy in 1994. Using the definition of direct BO, it was found that the proportion of direct BO out of the total ownership of companies listed on the Johannesburg Stock Exchange (JSE) presented a low 3%. Indirect ownership, by way of membership of a retirement fund or any other fund, such as a unit trust fund, was therefore not included in the 3%.

To better understand corporate governance models and their effects on companies' strategies over the last three decades, researchers used the agency theory to provide an explanation of the correlation between ownership structure and performance (Collin et al. 2013). According to Saona and Martin (2016), empirical studies on the impact of ownership concentration and ownership by different shareholders on company performance produced mixed findings. However, much is unknown of the effect of BO and performance in a developing market such as South Africa, providing the authors with an opportunity to investigate how South African companies react to changes and allocation of rights in the structure of ownership. Demsetz (1983) suggest that a change in the ownership structure of companies in developing economies is expected to create the company's value (Jones, Kalmi & Migind 2005).

To the best of the authors' knowledge, there has been limited research on the relationship between direct BO, performance, and capital structure in JSE-listed companies. The objective of this study was to investigate the impact of BO on debt ratio and company performance of JSE-listed companies. The paper fills the gap by investigating whether the structure of ownership, and in particular direct BO, could explain the changes in company performance and debt ratios.

The remainder of the paper is structured as follows: The role played by ownership structure in performance and capital structure and the discussion of some of the control variables are presented in the second section, details of the data and the model specification in third section, while the empirical results are presented in fourth section with the summary in the fifth.

## Literature review and hypothesis development

### Black ownership, capital structure and performance

#### Black ownership and capital structure

The relationship between ownership and capital structure continues to attract the attention of scholars in the financial field during the last couple of decades. Jensen and Meckling (1976) indicated that ownership structure must be defined as a capital contribution. Therefore, Jensen and Meckling (1976) argued that ownership structure consist of inside equity (managers), outside equity, and debt, thus suggesting an extended form of ownership structure that goes beyond the debtholder and equity-holder perception (Bokpin & Arko 2009). However, ownership structure can be constructed, using variables such as foreign share ownership proportions, managerial ownership percentage, ownership of largest institutional shareholder, ownership of largest individual and equity ownership of government (Zheka 2005). Some authors suggest that ownership positively correlates with leverage (Bajaj, Chan and Dasgupta 1998).

According to Brailsford, Oliver and Pua (2002), a well-diversified portfolio of assets investment is preferred by shareholders to minimise portfolio risk, based on the portfolio theory. However, because a large percentage of wealth comes from investment in non-diversifiable human capital relative to companies, managers will strive to achieve the same minimum level risk (Brailsford, Oliver & Pua et al. 2002). According to Crutchley and Hansen (1989) non-diversifiable risks, lead to the reduction in welfare because risk-averse managers carry the burden of the unavoidable risk linked to the fortunes of the companies. To ensure the continuity of the company, the empirical findings by Brailsford et al. (2002) suggest that when given an opportunity, managers decrease the company's debt to lower the non-diversifiable employment risks (Friend & Lang 1988). Prior research argues that the negative correlation between debt ratios and ownership structure suggest low agency costs which are associated with high ownership. This is in line with the findings by some authors (Firth 1995; Kocenda & Svejnar 2003; Nivorozhkin 2005). In contrast, other authors found a positive and significant relationship between debt ratio and ownership concentration (Céspedes, Gonzales & Molina 2010; Huang & Song 2006). The positive relationship is supported by the narrative of failure to protect minority shareholders resulting in companies choosing debt as a financing source to the detriment of equity, because the new equity issue might imply the loss of company control.

The introduction of BO, by way of government intervention, in subscribing the number of black employees, as is the case in South Africa, may increase the opportunities available to a company suggesting an inverse relationship between the level BO and the capital structure, because South African companies may not need to borrow as they will be generating more revenue. In addition, if the lenders observe that the

equity of a company is encumbered and subject to covenants, which may lead to higher levels of risk, they will either increase the interest rate or not lend to the company at all. In that case, the higher the BO of the company, the lower the debt the company is able to contract, suggesting an inverse relationship between the two variables (BO and the level of debt). In the context of a fraction of BO, the following hypothesis was formulated:

**H1:** Direct BO as a percentage of total ownership does not explain a company's financing decisions.

### Black ownership and performance

According to Aluchna and Kaminski (2017), the fundamental assumption that 'different ownership structures may result in different production possibility sets and performance' informed studies on the relationship between ownership structure and company performance while the company's institutional context could influence this relationship's strength and direction (Sánchez-Ballesta & García-Meca 2007). However, Kapopoulos and Lazaretou (2007) argue that research has found little evidence of a relationship between ownership structure and company performance.

Researchers focused on the separation of ownership and control which causes the principal-agent conflict and is heightened by the distribution of ownership structure (Fama & Jensen 1983; Jensen 1986; Jensen & Meckling 1976). Hilli et al. (2013) argue that costs generated by the conflicting interests between managers and shareholders are destructive in terms of the company value. Hu and Izumida (2008) suggest that medium concentration is likely to promote majority shareholder's managerial engagement and generally has a positive effect on company performance, and in addition, medium concentration minimises the cost of coordination and increases supervision of opportunity-driven managers. Minority shareholders may also benefit from improved performance and increased company value (Maury & Pajuste 2005). The agency theory expects a positive relationship between ownership concentration and firm performance in the case of high ownership concentration. There is evidence of lower agency costs and high firm value resulting from aligned interests between managers and shareholders. Although some studies found no significant relationship between firm structure and firm performance, other studies found a positive relationship (Shleifer & Vishny 1986; Stein 1989; Thomsen, Pedersen & Kvist 2006), while a third group of studies found a negative relationship (Aluchna & Kaminski 2017). The overall effect of increased ownership concentration on firm performance is negative as it leads to an increased cost of capital because of declining market liquidity. The following hypothesis is formulated in the context of a fraction of BLK structure as a percentage of ownership:

**H2:** Direct BO as a percentage of total ownership does not explain company performance.

Some of the control variables used in the study to overcome model misspecification are defined and explained in the following section.

### Control variables

**Company size:** Larger companies have a higher performance and are less likely to be bankrupt and may therefore contract debt more easily (Bhaduri 2002; Titman & Wessels 1988). As a result, it is expected that the company size is positively correlated with debt ratio and company performance.

**Company age:** The age of a company is measured by the difference between observation year and establishment year. Company age is used as a measure of the reputation in capital structure studies (Abor & Biekpe 2007). Petersen and Rajan (1994) argued that companies with higher debt ratios were more likely to be older, because they were supposed to be of a higher quality. The empirical results indicated that age correlated negatively and significantly with both total debt and short-term debt. Age is also a measure of performance, and the empirical findings indicated that age positively correlated with performance (Glancey 1998; Lumpkin & Dess 2001). This finding is supported by the explanation that older companies may enjoy the benefits of learning and experience, rely on a superior performance and a decrease in efficiency cost, while not being subject to all the liabilities of being new.

**Liquidity:** The trade-off theory suggests that an increase in liquidity will increase the ability of a company to borrow more, due to a high level of cash or liquid assets to service the interest and principal payment on time (Shahar, Adzis & Baderi 2016). High liquidity ratios allow a company to have a high leverage ratio (debt as a percentage of total capital). This positive relationship is supported by some researchers (Md-Yusuf, Yunus & Supaat 2013; Nadaraja, Zulkafli & Masron 2011). Liquidity is also positively correlated with company performance (Ayaz, Zabri & Ahmad 2021). The positive relationship liquidity and profitability suggests that companies have excess working capital for growth opportunities. This finding is supported by some authors (Deloof 2003; Goddard, Tavakoli & Wilson 2005; Palazoo 2012; Safdar et al. 2016). However, other researchers concluded that liquidity had a statistically significant negative effect on performance (Eljelly 2004; Jose, Lancaster & Stevens 1996; Wang 2002)

**Performance:** Each theory on capital structure states different relationships to company profitability. Therefore, the ratio between debt and equity will differ (Khan, Bashir & Islam 2020). For example, Khan et al. (2020) argue that companies with positive earnings before taxes, should aim at higher debt ratios to benefit from tax shields as predicted by the trade-off theory. As a result, a positive relationship between leverage and profitability should be expected (Khan et al. 2020). In contrast to this narrative, the information asymmetry and the pecking order theory, suggest that internal funds should be used first for companies with a positive income, because the market will not perceive this as a negative signal suggesting a negative relationship between the variables (Khan et al. 2020). The majority studies in line with the pecking order theory suggested that profitability negatively correlated with debt ratios (Hoque & Pour 2018; Sheikh & Qureshi 2017; Sheikh & Wang 2013).

**Leverage:** According to Ayaz et al. (2021), the relationship between leverage and profitability has been at the centre of attraction for the past decades. Researchers suggested three theories (the trade-off theory, the pecking order theory [POT], and the agency cost theory) which explain the relationship between capital structure and company profitability. These theories take different views on explaining the relationship between the capital structure and company profitability (Ardalan 2017). For instance, the trade-off theory suggested by Kraus and Litzenberger (1973) argues that a company will create a balance between costs and benefits by using debt financing. As a result, managers are interested in increasing the use of leverage, which eventually maximises company performance, suggesting a positive relationship (Ayaz et al. 2021; Zeitun & Saleh 2015). On the other hand, the POT proposed by Myers and Majluf (1984) indicates that a company prioritises its funding sources from internal (retained earnings and depreciation) to external (debt) and to equity, suggesting an inverse relationship between debt ratios and performance.

## Data and model specification

### Sample

To investigate the effect of BO on performance and capital structure, data were sourced from the Iress database, a prominent source of financial data in South Africa, and annual reports for the period 2007–2014. This period is characterised by the 2008 financial crisis. One hundred and eighty-seven JSE-listed companies, without any significant gaps over the sampled period, were selected from eight sectors (the basic materials, consumer goods, consumer services, healthcare, technology, telecommunication, industrials, as well as oil and gas). Therefore, the data consisted of a panel of 187 companies observed over an 8-year period providing a total of 1496 observations. Winsorisation was applied to the data at the first and 99th percentiles to minimise the problem of outliers in both cross-sectional and panel regressions.

### Model specification

The study was a deductive model based on an in-depth analysis of cross-sectional and time-series pooled data from the audited annual reports of JSE-listed companies. It was also a causal study because it sought to demonstrate the effect of BO on performance and capital structure. To investigate the relationship, the research used fixed-effects and random-effects models. According to Vieira, Neves and Dias (2019) panel data models have a number of benefits over other models. These advantages include greater variability of data, more information, more degrees of freedom, good control of the impact of omitted company's, more accurate inference and greater control of the endogeneity (Baltagi, Bratberg & Holmås 2005; Hsiao 2007). However, according to some authors (Ayaz et al. 2021; Gaud et al. 2005; Le & Phan 2017), the fixed-effects model may generate estimates that are biased and inconsistent because of the endogeneity. Some authors (Ayaz et al. 2021; Ullah, Akhtar & Zaefarian 2018)

argue that not only will the results be biased and inconsistent, but they will also yield misleading conclusion and unsuitable theoretical understanding. As a result, in the research a dynamic two-step generalised method of moments (GMM) estimation technique was used to alleviate the endogeneity problem and produce consistent estimates (Bänziger 2018). To determine the empirical impact of BO on capital structure and performance following prior research (Ayaz et al. 2021), the following regression models are used:

$$\text{CAPS}_{i,t} = \alpha + \beta_1 \text{BLK}_{i,t} + \beta_2 \text{SZE}_{i,t} + \beta_3 \text{ROA}_{i,t} + \beta_4 \text{LIQ}_{i,t} + \beta_5 \text{AGE}_{i,t} + \epsilon_{i,t} \quad [\text{Eqn 1}]$$

$$\text{PERF}_{i,t} = \alpha + \beta_1 \text{BLK}_{i,t} + \beta_2 \text{SZE}_{i,t} + \beta_3 \text{ROA}_{i,t} + \beta_4 \text{LIQ}_{i,t} + \beta_5 \text{AGE}_{i,t} + \epsilon_{i,t} \quad [\text{Eqn 2}]$$

$$\text{CAPS}_{i,t} = \beta_0 + \lambda \text{CAPS}_{i,(t-1)} + \beta_1 \text{BLK}_{i,t} + \beta_2 \text{SZE}_{i,t} + \beta_3 \text{ROA}_{i,t} + \beta_4 \text{LIQ}_{i,t} + \beta_5 \text{AGE}_{i,t} + \nu_{i,t} \quad [\text{Eqn 3}]$$

$$\text{PERF}_{i,t} = \beta_0 + \lambda \text{PERF}_{i,(t-1)} + \beta_1 \text{BLK}_{i,t} + \beta_2 \text{SZE}_{i,t} + \beta_3 \text{ROA}_{i,t} + \beta_4 \text{LIQ}_{i,t} + \beta_5 \text{AGE}_{i,t} + \nu_{i,t} \quad [\text{Eqn 4}]$$

The variables are defined in Table 1.

## Findings and discussion

### Descriptive statistics

In this section, the results of the study are presented and discussed according to the literature review and the formulated hypotheses. Table 2 provides a summary of descriptive statistics including minimum, maximum, mean, standard deviation, the 50th percentile and the 99th percentile values of all variables. The three measures of the capital structure (Short-term debt, long-term debt and total debt based on market value) recorded overall means of 26%.

**TABLE 1:** Definition of variables.

Variables names	Acronym	Definition
Capital structure measures CAPS		
Short-term debt		Short-term debt/(total debt + market value of equity)
Long-term debt		Measured as long-term debt/(total debt + market value of equity)
Total debt		Measured as total debt/(total debt + market value of equity)
Performance measures PERF		
Return on assets		(Profit before interest and tax [EBIT] – total profit of extraordinary nature/ total assets) *100
Return on equity		(Profit after taxation/total owners' interest) *100
Tobin's Q		(Market value of equity + book value of interest-bearing debt)/fixed assets valued at replacement cost
Black ownership	BO	Percentage of black ownership out of total ownership, expressed as a decimal
Control variables		
Size of the company	SZE	Log total assets
Age of the company	AGE	The number of years since the company was incorporated
Liquidity	LIQ	Current assets/total current liabilities

EBIT, Earnings before interests and tax.

(0.255), 14% (0.143) and 36% (0.358) respectively and dispersed from 0% to 91%, 0% to 65% and 0% to 100%. The finding suggests that most companies in the sample were more equity financed than debt financed. In addition, the finding suggests that South African companies listed on the JSE used 36% of debt and were less indebted than companies in China (Zou & Xiao 2006), Germany (Abdullah & Tursoy 2021) and Vietnam (Le & Phan 2017). However, the debt ratio was higher than companies in France (Lin et al. 2013). Tobin's Q (TQ) was 148% for the full sample. Return on assets (ROA) and return on equity (ROE) recorded overall means of 10% and 12%. The performance measures indicated that South African companies performed poorly during the period 2007–2014. Some of the reasons for the low ratios may be the 2008 financial crisis and low-rate participation of the proportion of BO. Further, the market gap in performance was highlighted by maximum and the minimum. The average BO proportion out of the total ownership structure was 0.3% (0.29), suggesting that direct BO represented about 3% of the total ownership. The average company size in the

sample was 6.239, calculated as the logarithm of total assets. The average age of JSE-listed companies in the sample was 25.037 years. The liquidity registered an overall mean of 2.189. The variable that presented the highest standard deviation is age.

## Correlation matrix

To check for multicollinearity problems, a correlation analysis was used. Table 3 reports these results. The results in Table 3 revealed that the coefficients were less than the value of 0.80, indicating that the variables were not highly correlated (Ayaz et al. 2021). The correlation results show that debt ratios (short-term debt and total debt based), company size and ROE had significant and inverse relationships with direct BO. Performance measures inversely and significantly correlated with debt ratios. Company age inversely and significantly correlated with the total debt ratio. Liquidity negatively and significantly correlated with debt ratio. Company size positively correlated with leverage and performance. This finding supports the notion that large companies have more assets for collateral and it is easier for them to negotiate better terms with lenders (Butt & Hasan 2009).

## Regression results

To determine the effects of direct BO on debt ratios and performance, a fixed-effects model, a random-effects model and a two-step generalised method of moments were used. Table 4 presents the results of the fixed-effects model (Equation 1–3) and the random-effects model (Equation 4–6) for the effect of BO on capital structure; Table 5 presents the results of the fixed-effects model (Equation 1–3) and the random-effects model (Equation 4–6) for the effect of BO on performance. The fixed effect model is the best model for the

**TABLE 2:** Descriptive statistics of the variables used to determine the effect of direct black ownership on capital structure and performance.

Variables	N	Mean	Std. Dev.	Min	Max	Median	99th percentile
LSM	1495	0.255	0.193	0	0.905	0.209	0.905
LLM	1443	0.143	0.139	0	0.646	0.1	0.646
LTM	1495	0.394	0.238	0	1	0.358	1
ROA	1496	0.097	0.199	-0.86	0.657	0.107	0.657
ROE	1496	0.116	0.353	-2.02	1.233	0.142	1.233
TBQ	1496	1.489	1.331	0	8.34	1.09	8.34
LIQ	1495	2.189	3.045	0	25.13	1.45	25.13
AGE	1495	25.037	20.433	0	55	16	55
SZE	1495	6.239	1.37	0	8.765	6.326	8.765
BO	1495	0.029	0.07	0	0.386	0	0.386

LSM, short-term debt based on market value; LLM, long-term debt based on market value; LTM, total debt based on market value; TBQ, Tobin's Q; ROA, return on assets; ROE, return on equity; AGE, company age; LIQ, company liquidity ratio; BO, percentage of black ownership out of total ownership; Std. Dev., standard deviation.

**TABLE 3:** Correlation matrix of the variables.

Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
(1) BO	1.000	-	-	-	-	-	-	-	-	-	-
(2) LSM	-0.066 (0.011)	1.000	-	-	-	-	-	-	-	-	-
(3) LLM	0.030 (0.262)	-0.030 (0.249)	1.000	-	-	-	-	-	-	-	-
(4) LTM	-0.047 (0.070)	0.798 (0.000)	0.586 (0.000)	1.000	-	-	-	-	-	-	-
(5) TBQ	0.015 (0.559)	-0.409 (0.000)	-0.277 (0.000)	-0.500 (0.000)	1.000	-	-	-	-	-	-
(6) ROA	-0.029 (0.258)	-0.134 (0.000)	-0.181 (0.000)	-0.191 (0.000)	0.112 (0.000)	1.000	-	-	-	-	-
(7) ROE	-0.078 (0.003)	-0.109 (0.000)	-0.120 (0.000)	-0.142 (0.000)	0.112 (0.000)	0.636 (0.000)	1.000	-	-	-	-
(8) AGE	-0.022 (0.403)	0.014 (0.583)	0.040 (0.131)	0.048 (0.062)	-0.081 (0.002)	0.100 (0.000)	0.106 (0.000)	1.000	-	-	-
(9) SZE	-0.056 (0.030)	0.007 (0.781)	0.211 (0.000)	0.146 (0.000)	0.100 (0.000)	0.188 (0.000)	0.172 (0.000)	0.333 (0.000)	1.000	-	-
(10) LIQ	-0.007 (0.794)	-0.160 (0.000)	-0.014 (0.588)	-0.164 (0.000)	0.112 (0.000)	-0.104 (0.000)	-0.059 (0.023)	-0.048 (0.063)	-0.052 (0.045)	1.000	-

Note: *P*-value in parentheses.

BO, percentage of black ownership out of total ownership; LSM, short-term debt based on market value; LLM, long-term debt based on market value; LTM, total debt based on market value; TBQ, Tobin's Q; ROA, return on assets; ROE, return on equity; AGE, company age; LIQ, company liquidity ratio.

**TABLE 4:** The effect of black ownership on capital structure (fixed-effects and random-effects models) of companies listed on the Johannesburg Stock Exchange.

Variables	(1)	(2)	(3)	(4)	(5)	(6)
	LSM	LLM	LTM	LSM	LLM	LTM
BO	-0.0523 (0.1007)	-0.0293 (0.0792)	-0.1167 (0.1194)	-0.1076 (0.0917)	-0.0355 (0.0702)	-0.1827* (0.1071)
TBQ	-0.0253*** (0.0035)	-0.0352*** (0.0028)	-0.0597*** (0.0041)	-0.033*** (0.0033)	-0.0352*** (0.0026)	-0.0679*** (0.0039)
AGE	0.0031*** (0.0012)	0.0006 (0.0009)	0.0035** (0.0014)	-0.0004 (0.0004)	-0.0003 (0.0004)	-0.0007 (0.0005)
LIQ	-0.0055*** (0.0013)	-0.0013 (0.0012)	-0.0094*** (0.0015)	-0.0054*** (0.0013)	-0.0009 (0.0012)	-0.0087*** (0.0015)
SZE	0.0445*** (0.0035)	0.0314*** (0.0026)	0.0779*** (0.0041)	0.0405*** (0.0032)	0.0315*** (0.0024)	0.0728*** (0.0038)
1.BONBO	0.0097 (0.0124)	0.0189** (0.0093)	0.0309** (0.0146)	0.017 (0.0119)	0.0246*** (0.0087)	0.045*** (0.0139)
_cons	-0.0518* (0.0294)	-0.022 (0.0223)	-0.075** (0.0349)	0.0703*** (0.0224)	0.0006 (0.0168)	0.0704*** (0.026)
Observations	1495	1443	1495	1495	1443	1495
Adjusted-R <sup>2</sup>	0.1738	0.1957	0.3330	0.1611	0.1947	0.3229

BO, percentage of black ownership out of total ownership; LSM, short-term debt based on market value; LLM, long-term debt based on market value; LTM, total debt based on market value; TBQ, Tobin's Q; ROA, return on assets; ROE, return on equity; AGE, company age; LIQ, company liquidity ratio.

**TABLE 5:** The effect of black ownership on performance (fixed-effects and random-effects models).

Variables	(1)	(2)	(3)	(4)	(5)	(6)
	TBQ	ROA	ROE	TBQ	ROA	ROE
BO	-0.0763 (0.7524)	-0.0223 (0.1226)	-0.2007 (0.2897)	-0.0173 (0.662)	0.0946 (0.107)	-0.2611 (0.2151)
LLM	-3.1728*** (0.2531)	-0.1766*** (0.0412)	-0.208** (0.0974)	-3.1506*** (0.2353)	-0.2221*** (0.0384)	-0.3157*** (0.081)
AGE	-0.0248*** (0.0082)	-0.0085*** (0.0013)	-0.0108*** (0.0032)	-0.0109*** (0.0033)	-0.0007 (0.0005)	0.0005 (0.0008)
LIQ	0.0158 (0.0117)	0.0035* (0.0019)	-0.0062 (0.0045)	0.0187* (0.0112)	0.0015 (0.0018)	-0.0061 (0.004)
SZE	0.2649*** (0.0247)	0.0277*** (0.004)	0.032*** (0.0095)	0.2483*** (0.0227)	0.0241*** (0.0037)	0.034*** (0.008)
1.BONBO	0.0206 (0.0885)	-0.0099 (0.0144)	0.019 (0.0341)	0.0321 (0.0826)	-0.0348*** (0.0135)	-0.0124 (0.0291)
_cons	0.8346*** (0.2103)	0.1683*** (0.0343)	0.2385*** (0.081)	0.5776*** (0.1567)	0.0039 (0.025)	-0.0391 (0.0501)
Observations	1443	1443	1443	1443	1443	1443
Adjusted-R <sup>2</sup>	0.1532	0.0641	0.0171	0.1511	0.0371	0.0070

Note(s): Standard errors are in parentheses. \*\*\*,  $p < 0.01$ ; \*\*,  $p < 0.05$ ; \*,  $p < 0.1$ .

BO, percentage of black ownership out of total ownership; LSM, short-term debt based on market value; LLM, long-term debt based on market value; LTM, total debt based on market value; TBQ, Tobin's Q; ROA, return on assets; ROE, return on equity; AGE, company age; LIQ, company liquidity ratio.

interpretation and discussion based on the Hausman (1978) test. The results of the two-step generalised method of moments are presented in Tables 6 and 7 for the capital structure and performance, respectively, and their relationship with BO. Many of the research results were virtually the same when using the different measures of capital structure and performance suggesting that the findings are robust and valid. Furthermore, most of the coefficients estimated, had the expected signs and were significant. The results showed that BO was not significant in both the capital structure and performance equations in the fixed-effects and random-effects models. However, in the generalised method of moments, the coefficient of BO inversely and significantly

**TABLE 6:** The effect of black ownership on capital structure (generalised method of moments).

Variable	Dependent variable		
	(1)	(2)	(3)
	LSM	LLM	LTM
L.LSM/LLM/LTM	0.1559* (0.0882)	0.5565*** (0.0796)	0.1833** (0.0717)
BO	-0.2257 (0.349)	-0.3984** (0.189)	-0.5078 (0.4205)
SZE	0.0307** (0.014)	0.0318* (0.0175)	0.0626*** (0.0169)
ROA	-0.1304* (0.0698)	-0.0198 (0.0595)	-0.1407* (0.0847)
LIQ	-0.0064* (0.0033)	0.0045 (0.0039)	-0.009** (0.0038)
AGE	0.0008 (0.0014)	-0.0006 (0.001)	0.0005 (0.0018)
1.BONBO	0.1022 (0.0622)	0.1122*** (0.0426)	0.1927** (0.0756)
BCM	-0.3523*** (0.0857)	0.0587 (0.0404)	-0.1981** (0.088)
CNG	-0.2549** (0.1141)	-0.0134 (0.0508)	-0.1938 (0.1236)
CNS	-0.5001*** (0.1855)	-0.0036 (0.0618)	-0.5364** (0.2382)
HTC	-0.6693** (0.3194)	-0.2713 (0.1866)	-0.6002 (0.4107)
OAG	-0.6115* (0.3493)	-0.0269 (0.0897)	-0.6956* (0.3605)
TEC	-0.2621 (0.1692)	0.015 (0.0741)	-0.1586 (0.1831)
TEL	0.2445 (0.3485)	-0.0541 (0.1077)	0.1161 (0.317)
_cons	0.2411** (0.1099)	-0.1556 (0.0981)	0.0964 (0.1136)
Year dummy	Yes	Yes	Yes
Observations	1308	1248	1308
AR (1)	-2.80***	-4.14***	-3.38***
AR (2)	-0.67	0.45	0.56
Hansen test	152.87	107.15	159.64

Note(s): Robust standard errors are in parentheses.

BO, percentage of black ownership out of total ownership; LSM, short-term debt based on market value; LLM, long-term debt based on market value; LTM, total debt based on market value; TBQ, Tobin's Q; ROA, return on assets; ROE, return on equity; AGE, company age; LIQ, company liquidity ratio; BCM, basic materials; CNG, consumer goods; CNS, consumer services; HTC, healthcare; OAG, oil and gas; TEC, technology; TEL, communication; IND, industrials and the base category in the GMM equation; AR(1), (2), first and second order serial correlation test.

The results showed that there was no second-order correlation problem (see AR [2]).

\*\*\*,  $p < 0.01$ ; \*\*,  $p < 0.05$ ; \*,  $p < 0.1$ .

correlated with long-term debt and TQ. As a result, hypotheses 1 and 2 are rejected. This finding supports the prediction that companies with a relatively small proportion of BO cannot support high leverage and high performance. However, the negative relationship might have been caused by other reasons. For example, debt may be restricted to BO. Surprisingly, the coefficient of BO positively and significantly correlated with ROA. The coefficient of the dummy variable, BO and total ownership, indicated that the proportion of leverage was lower for BO than for total ownership. The dummy variable was insignificant in the performance equations in the fixed- and random-effects models but significant in the generalised method of moments. This finding indicated that performance was higher for BO than for total ownership when the dependent variable was the TQ.

**TABLE 7:** The effect of black ownership on performance (generalised method of moments).

Variable	Dependent variable		
	(1)	(2)	(3)
	TBQ	ROA	ROE
L.TBQW/ROA/ROE	0.0453 (0.0865)	0.1039 (0.0787)	-0.0946 (0.0901)
BO	-8.5197*** (3.1678)	0.8563* (0.4575)	-2.1816 (1.544)
SZE	0.3116*** (0.1173)	0.0343* (0.0203)	0.0635** (0.0279)
LLM	-5.7528*** (2.1155)	-0.0081 (0.1433)	0.0645 (0.3216)
LIQ	0.0807*** (0.0248)	0.0042 (0.0043)	0.0044 (0.0084)
AGE	-0.0421** (0.0176)	-0.0011 (0.0015)	-0.0008 (0.0037)
1.BONBO	1.7219*** (0.6101)	-0.178** (0.0816)	0.0771 (0.1794)
CNG	1.0098 (1.4254)	0.1148 (0.143)	0.1297 (0.3258)
CNS	3.6901*** (1.3251)	0.421*** (0.1246)	0.6783** (0.3134)
HTC	2.7626** (1.117)	0.117 (0.1425)	0.6493 (0.6244)
IND	-0.8082 (0.9592)	0.289*** (0.0919)	0.3098 (0.1963)
OAG	0.6556 (1.5723)	0.1121 (0.2148)	-0.2523 (0.6105)
TEC	1.7211 (1.1011)	0.3055*** (0.0981)	0.5516* (0.2843)
TEL	-2.8265 (3.2095)	0.069 (0.2335)	-0.5301 (0.8386)
_cons	0.4155 (1.0973)	-0.3117** (0.1409)	-0.567** (0.2822)
Year dummy	Yes	Yes	Yes
Observations	1262	1262	1262
AR (1)	-2.29**	-3.22***	-2.09**
AR (2)	0.52	0.14	0.43
Hansen test	78.26	149.97	117.16

Note: Robust standard errors are in parentheses.

BO, percentage of black ownership out of total ownership; LSM, short-term debt based on market value; LLM, long-term debt based on market value; LTM, total debt based on market value; TBQ, Tobin's Q; ROA, return on assets; ROE, return on equity; AGE, company age; LIQ, company liquidity ratio; CNS, consumer goods; HTC, healthcare; OAG, oil and gas; TEC, technology; TEL, communication; IND, industrials; BCM, basic materials and the base category; AR(1), (2), first and second order serial correlation test.

The results showed that there was no second-order correlation problem (see AR [2]).

\*\*\*,  $p < 0.01$ ; \*\*,  $p < 0.05$ ; \*,  $p < 0.1$ .

However, performance was lower for percentage of BO, than for total ownership, when ROAs was used as the dependent variable. Profitability had a negative and significant relationship with all debt ratios, while long-term debt based on market value (LLM) negatively correlated with all performance. The negative relationship suggests that South African companies prioritise their funding sources from internal to external, and debt to equity (Ayaz et al. 2021). There was strong evidence that company size had a positive effect on leverage ratios and performance measures. The positive relationship may suggest that large companies may be more diversified and fail less often. Age positively and significantly correlated with debt ratios and negatively and significantly correlated with performance. The positive

relationship between age and leverage is in line with the narrative that older companies have higher debt ratios, because they feel somewhat obliged to present themselves as higher-quality companies, while the negative correlation between age and performance contradicts the notion that older companies are more experienced, enjoy the benefits of learning, are not prone to the liabilities of new companies and therefore enjoy superior performance and a decrease in costs.

In the generalised method of moments, the empirical findings indicated that the coefficients of the lagged three measures of capital structure were positive, as expected. The adjustment coefficient of LLM was relatively large (more than 0.5), possibly providing evidence that companies adjusted their debt ratio ratios faster to reach their target debt ratios.

The cost of deviating from target debt ratios is a possible explanation for this adjustment speed. However, for short-term and total debt, the adjustment coefficient was smaller. The lagged coefficients of performance were positive and insignificant. The finding indicated that past realisation of performance was not significant in explaining future realisation of performance. The coefficient of company profitability inversely and significantly correlated with debt ratios. The findings also indicated that industry effects were significant in explaining financing decisions and performance in some sectors relative to other sectors.

## Conclusion

To explain the ownership structure, the capital structure and performance decisions, several theories were put forward. As a result, the relevance of these was sought empirically within an emerging market context. While empirical evidence of ownership, as a determinant of capital and performance, has been presented over the last decades, the impact of BO structure on debt ratios and performance in South Africa remained under-researched. Using panel data techniques (fixed-effects model, random-effects model and two-step generalised method of moments), this study sought to bridge the gaps by providing empirical evidence of the impact of direct BO percentage, out of total ownership, on performance and capital structure.

The empirical findings revealed the direction and marginal effect of the impact of BO structure depended on the capital structure measures and performance measures. Black ownership significantly and negatively influenced the choice of LLM and TQ.

This study also observed other company-specific factors that were significant in predicting corporate capital structure and performance. Age negatively and significantly influenced performance, while it significantly and positively correlated with capital structure. Size positively and significantly correlated with capital structure and performance. Companies listed on the JSE may borrow more and generate more profit than their operational sizes

increase. Liquidity negatively and significantly correlated with capital structure. Liquidity ratio positively and significantly correlated with performance. Capital structure negatively and significantly correlated with TQ. Return on assets negatively and significantly correlated with short-term and LLM.

This research makes a number of contributions. Firstly, it provides an understanding of how BO percentage affects performance and debt ratios. Secondly, the research contributes to the debate by providing an understanding of how the proportion of direct BO, relative to total ownership, affects capital structure and performance. The study has various limitations. Firstly, using secondary data, the research applied empirical methods to determine the impact of direct BO on capital structure and performance. To better understand the relationship between the variables, it is important for future research to use survey data or a combination of both. This will assist in understanding direct BO as a percentage of total ownership behaviour towards debt financing and performance decisions. Secondly, many private companies and small to medium black-owned companies are not listed on the JSE. Their behaviour may be different from that of listed companies, especially in an emerging market such as South Africa. As a result, it is important that future research considers such companies.

## Acknowledgements

### Competing interests

The author(s) declare that they have no financial or personal relationship(s) that may have inappropriately influenced them in writing this article.

### Authors' contributions

All authors contributed to this manuscript.

### Ethical considerations

This article meets all ethical standards for research without direct contact with human or animal subjects.

### Funding information

This research received no specific grant from any funding agency in the public, commercial or not-for-profit sectors.

### Data availability

Data supporting the findings of this study are available from the corresponding author [M.M.] on request.

### Disclaimer

The views and opinion expressed in this article are those of the authors and do not necessarily reflect the official policy or position of any affiliated agency of the authors.

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