“Government assistance to state-owned enterprises: a hindrance to financial performance”

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This study aimed to examine whether government financial assistance influences the financial performance of state-owned enterprises. Commercial state-owned enterprises in South Africa that are listed under the Public Financial Management Act during the post-apartheid era from 1995 to 2017 were sampled. Government guarantees were measured as a dummy variable, while financial performance was measured by accounting measure: return on assets (ROA). Endogeneity issues were addressed, and data analysis was performed on an unbalanced panel using the two-step system GMM. The empirical evidence indicated that support by the government in the form of guarantees and subsidies has a significant negative effect on the financial performance of state-owned enterprises. This is an indication that continued government bailouts to poor performing state-owned enterprises exacerbates their poor financial performance and encourages these enterprises to become too reliant on government assistance, burdening the national fiscus.

INTRODUCTION

There has been ongoing negative media publicity on the poor performance of South African state-owned enterprises (SOEs). These enterprises constantly find themselves in precarious financial positions where they cannot meet their financial obligations. South African SOEs’ poor performance has led to government intervention in the form of grants, funds, rebates, and subsidies. The impact of this financial assistance has been the subject of debate due to poor evidence of any incremental effect and a lack of clarity on whether the overall benefit of these subsidies exceeds their often-large costs (Xiang & Worthington, 2017).

Despite increased government support, the financial performance of many SOEs is not improving, and they seem to continue to be in a state of perpetual financial distress, depending on government financial support and bailouts. The poor performance of these SOEs in an environment of weak overall economic growth has led to calls for the government to sell some of the underperforming SOEs (Chilenga, 2016).

Government guarantees may also hamper SOEs’ performance. According to the National Development Plan (NDP), guarantees should be used selectively to lower the cost of capital and secure long-term finance (National Planning Commission, 2010). One of the key risks to South Africa’s downgrade was the loss of control of fiscal policy, and
guarantees issued to SOEs pose an additional risk to the fiscal outlook (Department of National Treasury, 2016). Government guarantees to South African SOEs stood at more than ZAR 450 billion, and the government’s exposure increased from 54.4% to 64.5% in the 2017 fiscal year as SOEs drew on the guarantees, adding pressure on state finances. The increased guarantees granted to South African SOEs in 2017–2018 include ZAR 170 billion to Eskom, ZAR 53 billion to Passenger Rail Agency of South Africa; ZAR 53 billion to South African National Roads Agency Limited, ZAR 19.1 billion to South African Airways, and ZAR 4.4 billion to South African Post Office. This is an indication that these enterprises are incapable of running profitable operations (Rabilall, 2017). In 2018, the total guarantee used by Eskom increased by ZAR 51.1 billion, while it used an additional ZAR 50 billion of its ZAR350 billion guarantee in 2018–2019 (South African Government News Agency, 2019). Governance issues at many of these SOEs, rising contingent liabilities, and inadequate liquidity could add to pressure on government finances through the increased use of guarantees (South African Reserve Bank, 2018). Such guarantees lead to an increase in leverage, increasing risk-taking (Cordella, Ariccia, & Marquez, 2016). While SOEs perform at lower levels than their private-sector counterparts, they continue to exist due to government support (Halkos, 2002).

The South African government recognizes that some SOEs’ business models are unsustainable and that their capital structures are too reliant on debt (National Treasury, 2018). Furthermore, these underperforming SOEs can materially affect the broader public finances and become a drag on economic progress. SOEs’ performance levels continue to decline, with adverse effects on fiscal consolidation and economic progress (National Treasury, 2017). Many SOEs in developing and transition economies are loss-making and inefficient enterprises that are a burden on government finances and scarce resources. Their resulting poor financial performance affects service delivery and their ability to fulfill the government’s growth and developmental objectives (Hailemariam, 2001). When the government is the main shareholder, SOEs are protected from bankruptcy and takeovers. This weakens the incentive for financial viability as the government guarantees its financial survival through bailouts and subsidies (Chilenga, 2016). The government continues to support failing SOEs through explicit guarantees and grants, contributing to poor managerial decision-making and inefficient resource allocation. Cheteni and Khamfula (2018) argue that this contributes to their declining performance, exacerbating the financial burden on the fiscal and banking system and causing inflationary pressure and macro-economic instability due to currency volatility in exchange markets. Considering that the SOEs are receiving much support from the government and that their performance continues to decline, the main aim of this study is to investigate whether the support given to SOEs by the government makes things worse.

This study contributes to the literature on the performance of SOEs in two ways. First, the author offers new evidence on the impact of government guarantees on the financial performance of SOEs in an emerging market, South Africa, a country that is battling with a huge budget deficit partially contributed by poorly performing SOEs. None of the existing studies provide any emerging market evidence, although SOEs in such a market significantly contribute to the fiscal challenges faced by these economies. Second, from a methodological perspective, the current work improves on previous work by using a dynamic panel data model. This approach offers several advantages. It allows us to control for the existence of unobservable heterogeneity, as SOEs and government guarantees are tracked over time.

1. LITERATURE REVIEW

1.1. State-owned enterprises

SOEs are of great importance to the South African economy as they are regarded as the drivers of economic growth and significant vehicles in providing vital infrastructural services, including transport, energy, and water, hence, enabling the economy to grow while ensuring equal access to quality services (Kikeri, 2018).

Depending on the rationale for their establishment, SOEs can be classified into commercial or non-commercial enterprises. Commercial SOEs are government business enterprises that carry
out the functions of the government along commercial lines, with total or partial government ownership (Moeti, 2013). Commercial enterprises have a profit-maximization objective and are also tasked with economic development; however, their focus should also be on improving service delivery. Non-commercial SOEs are formed by the government to carry out functions on their behalf with the main aim of providing goods and services to the public. They pursue specific objectives that are not financially-driven, and they are legally barred from declaring dividends (OECD, 2015). SOEs can, thus, be defined as enterprises that are controlled and publicly owned with a focus on financial activities and economic growth. Ferreira (1993) defined SOEs as legal enterprises that have been partially or wholly established as business organizations by the government to conduct some commercial activities. Ferreira (1993) adds that they generate revenue through the sale of the products, goods, and services they trade, and even though the government intervenes financially, it remains the duty of SOEs to generate revenue.

The government is not completely responsible for funding SOEs to improve operations; these enterprises are also expected to formulate innovative revenue generation strategies in line with their business activities (Ferreira, 1993). According to Turner, Hulme, and McCourt (2015), SOEs can be described as enterprises, which sell output, are involved in market processes, and achieve clearly defined public purposes. Their activities are of a business nature, and they are considered as key drivers of social and economic growth throughout the world (Public Sector Research Centre, 2015).

The International Monetary Fund (2014) defines SOEs as public enterprises that are regarded as business enterprises, independent of their owners, namely government, through legislation and administrative regulations. They produce financial statements that clearly show the assets and liabilities that are used in their business operations. They include government agencies that are involved in trading commercial and industrial goods on a large scale to the public.

According to Bernier (2011), in the 20th century, SOEs were a fundamental tool to enable state involvement in the economy. He notes that defining the characteristics of ownership requires coordination among various stakeholders, as the relationship between the entity and its environment is usually complex. SOEs are used to respond to global issues that emanated from the bureaucracy of traditional government that could not meet new objectives and demands (Mtshali, 2016).

SOEs should aim to reduce the government’s burden. They should, hence, not be reliant on state funding but should generate revenue from the sectors that they operate in and, indeed, are often mandated by regulations to do so (World Bank Group, 2014). Turner et al. (2015) note that in most countries, the government holds 50% or more of the ownership stake in SOEs. Majority ownership enables the state to protect the public’s interests. Finally, specific systems of accountability are often adopted to guide SOEs (Mtshali, 2016).

### 1.2. Government guarantees

A government guarantee is a security instrument where the government provides an undertaking to partially or fully cover liabilities in case the debtor cannot repay a debt or meet another liability, which has been guaranteed, or when the borrower fails to meet his/her liabilities within the agreed time limit. These guarantees are issued to SOEs, development banks, guarantee agencies, and public-private partnership projects. They result in a direct or indirect legal relationship between the government and the debtholder (Bajo & Primorac, 2011).

Heald and Hodges (2018) define guarantees as being explicit when they are fully articulated and implicit when they are derived from an unstated understanding. Guarantees can be contractual, where they are legally enforceable or non-contractual, whereby a promise is made. Contingent credit risks are incurred when an SOE cannot meet its financial obligations to parties to whom the government has issued a guarantee. These risks may also arise when there are public expectations that the government will support a failed SOE that is deemed to be of national interest.

Government assistance to SOEs is not supported by any funding policy as assistance is based on their crisis levels and the seriousness of their fi-
nancial needs. Decisions to grant guarantees are taken by Parliament and National Treasury guided by the Public Financial Management Act (PFMA) (Sadiki, 2015). While the government must assist SOEs so they can play their role as catalysts of economic growth and development, it is equally important for a funding policy to be adopted to guide government support to these enterprises.

Government guarantees can have both positive and/or negative impacts. They can be used to lower the cost of capital, as well as secure long-term finance (National Planning Commission, 2010). However, large guarantees to SOEs expose the fiscus to risk, resulting in deterioration of the country’s fiscal position, which impacts credit ratings (Peterson, 2016). One can argue that government financial assistance may lead to distortion in financial markets by encouraging excessive capital use and gradual repayment, as well as enabling the survival of poorly performing firms. Furthermore, guarantees are not included in fiscal analyses and, hence, a distorted picture of the public finances is conveyed. This can threaten the efficiency of public financial management and may even impede reliable projections of fiscal policy effects in the future (Bajo & Primorac, 2011).

1.3. Review of empirical studies

Vu Van and Bartolacci (2017) conducted a study on Vietnamese SMEs during 2007–2015. The Ordinary Least Squares and Generalized Method of Moments methods were employed to analyze the effect of government support on performance, measured by ROA in SMEs. Government support was defined as a dummy variable to reduce measurement errors. Control variables included in the study included age, size, leverage, and innovation. The study found a positive relationship between government support and financial performance amongst Vietnamese SMEs where the capacity to tackle projects is facilitated.

Jin, Shang, and Xu (2018) studied Chinese enterprises during 2011–2015 using Linear Regression Models. The authors investigated the relationship between government subsidies and firm performance among SOEs and non-SOEs. Ownership was employed as a moderating variable. Government subsidy intensity was measured by the ratio of government subsidy to total assets. The study found that government subsidies improve the firm’s performance. They also showed that despite SOEs obtaining more subsidies than privately-owned firms, the impact of government subsidies was stronger among private firms.

Assagaf and Ali (2017) conducted a study on Indonesian SOEs during 2005–2016. Linear regression models were used for the data analysis to investigate the factors affecting financial performance among seven SOEs. Government subsidy was the moderating variable, and size, capital expenditure, and growth were control variables. Government subsidy had a significant negative effect on financial performance when tested as an independent variable, and it also strengthened the relationship between leverage and financial performance as the government encouraged SOEs to obtain loans rather than placing too much of a burden on the government. Strategic profitability showed a positive effect on financial performance.

Mbo (2017) conducted a study in Sub-Saharan Africa during 2001–2012. Using the fixed effects estimator, the study investigated the drivers of SOE performance focusing on power utilities among 23 SOEs in 10 countries. The variables were financial performance (dependent variable), liquidity, and board strength, stakeholder representation on board, government involvement in pricing as the independent variables to test the resource-based, agency, stakeholder, and public choice theories. The results showed that a strong board and availability of resources were linked to sound performance, hence, supporting the agency and resource-based theories. The study also found that a high level of government interference leads to poor performance.

Assagaf, Yusoff, and Hassan (2017) studied the impact of capital structure on the relationship between government subsidy, strategic profitability, and financial strength of Indonesian SOEs for the period 2005–2016 using linear regression analysis. The authors posited that the subsidy policy reduces the costs of other economic sectors and can be viewed as a burden on government spending. They added that government subsidies encourage management to be less concerned about the
level of financial strength, and more reliant on the subsidy to meet operational and investment needs. Hence, they can be viewed as an unfavorable option for SOEs’ development. These authors found that government subsidies had a significant negative effect on the financial performance of Indonesian SOEs.

Pergelova and Angulo-Ruiz (2014) studied the effect of public policy support on new firms’ performance in the USA during the period 2004–2010. The authors employed the tobit regression and the ordered probit regression models. The results indicated that government support has an indirect impact on firm performance through competitive advantage as such support assists in developing unique resources and capabilities. Overall and specific competitive advantages enable a firm to improve its performance; this is, hence, an indirect result of government support.

Garcia-Tabuenca and Crespo-Espert (2010) analyzed the allocation of guarantees as support measures to Spanish SMEs. The results showed that government financial support is directly related to profitability. Such support enables firms to access more resources, with a significant effect on firm performance. These findings suggest that government support improves efficiency levels and that this effect is stronger in weaker firms.

2. METHODOLOGY

2.1. Sample and data

The target population was SOEs, as listed under the PFMA. The sample frame consisted of the SOEs listed according to their schedule in the Act: Schedule 1 (9 Constitutional Institutions); Schedule 2 (21 Major Public Entities); Schedule 3a (154 National Public Entities); Schedule 3b (22 National Business Enterprises); Schedule 3c (69 Provincial Public Entities); and Schedule 3d (16 Provincial Business Enterprises).

Due to the nature of the main research question, which was to analyze the effect of government guarantees on financial performance, all non-commercial SOEs, namely, Schedule 1, 3a, and 3c were excluded from the sample. Entities that were excluded were all non-commercial entities, entities where the financial data required for key variables were missing for the period of analysis, and those whose data was presented in an unstandardized format. The final sample consisted of 33 SOEs. Data were obtained from the audited financial statements of the SOEs and economic indicators of the country for the period 1995–2017.

2.2. Variables and measures

2.2.1. Dependent variables

Indicators of firm financial performance can be divided into market-based and accounting measures. Considering the nature of the sample, market-based measures are not applicable. Hence, return on assets (ROA) measured as operating profit divided by total assets is used as a measure of financial performance.

2.2.2. Independent variables

Government financial assistance (GOVT) is a dummy variable that takes a value of one (1) if the SOE received any financial assistance from the South African government, including grants, subsidies, and rebates; otherwise, zero (0).

To avoid a spurious relationship between the dependent and the independent variables, control
variables have also been modelled. Leverage included the book values of short-term debt and long-term debt as most of the sample SOEs are unlisted firms. Long-term debt (LTD) is measured as long-term debt divided by total assets, and short-term debt (STD) is measured as short-term debt divided by total assets. Other variables include board monitoring (BOARD) measured as logarithm of board members; the size (SIZE) of the firm measured as natural logarithm of total assets; asset tangibility (TANG) measured as tangible assets divided by total assets; growth opportunities (GROW) measured as the percentage change in total assets; liquidity (LIQ) measured as current assets divided by current liabilities; non-debt tax shield (NDTS) measured as depreciation divided by total assets; and corruption (CPI) measured as the country’s corruption perception index. The credit ratings (CR) have been proxied by the country’s credit ratings as per Standard & Poor’s ratings as most of the sampled firms did not have ratings because they were unlisted.

2.2.3. Model specification

This study employed a panel data model, which enables observation of multiple phenomena obtained over multiple time periods for the same firms. Furthermore, a dynamic panel data model was used, which helps to deal with endogeneity problems, where firm performance influences leverage and leverage can influence firm performance.

The model was adapted from previous empirical studies (Chadha & Sharma, 2015; El-Sayed Ebaid, 2009; Fosu, 2013) to include control variables that influence financial performance where \( Y_i \) is the measure of financial performance measured by ROA for firm \( i \) in year \( t \), \( Z \) are the controlled variables, which include leverage, size, asset tangibility, growth, liquidity, non-debt tax shield, board monitoring, credit ratings, and corruption. The lagged profitability, \( Y_{i,t-1} \) is included the regression model to test whether profitability in the previous year influences the current year’s profitability of SOEs.

\[
Y_i = \alpha_0 + \rho Y_{i,t-1} + \sum_{k=1}^{N} Y_k Z_{ik} + Govt_{dummy} + \varepsilon_i
\]

A commonly applied technique by Arellano and Bond (1991) referred to as the GMM estimator is used to estimate the specified model. The application of GMM as an estimating technique in econometrics is predominantly because of its ability to account for endogeneity in models’ regressions arising from cases of reverse causality, simultaneity, and variable omission, amongst others. The system GMM by Blundell and Bond (1998) was employed as the estimator. More specifically, the two-step system GMM estimator, with orthogonal deviation, which is asymptotically more efficient (Lew, 2013), was employed as it caters to missing values and the survivorship bias of this study’s unbalanced panel.

3. RESULTS AND DISCUSSION

3.1. Descriptive analysis

This sub-section presents the summary statistics for the financial data of the 33 sampled South African SOEs for the period 1995–2017. The mean for ROA, measured by the ratio of operating profit to total assets, is 1%, which is an indication of the poor performance of South African SOEs. This is also consistent with other African countries. Nyamita (2014) reported a 1% ROA among Kenyan SOEs. In comparison to firms in South Africa’s private sector where the average ROA has been reported around 11 to 16%, with debt ratios of between 40 and 50% (Abor, 2007; De Vries, 2010; Gwatidzo, Ntuli, & Mlilo, 2016; Jardine, 2014), these are further indications of inefficiencies in the public sector, excessive debt levels, and insufficient retained earnings to fund further operations.

Most of the variables have a relatively low standard deviation, which indicates a small deviation of the actual data from the mean or expected values. All the variables indicate a high level of consistency as their mean values and standard deviation fall within the minimum and maximum range. Overall, the data are normally distributed, as confirmed by the Jarque-Bera statistics.
Table 1. Descriptive statistics

<table>
<thead>
<tr>
<th>Variable</th>
<th>Mean</th>
<th>Std. Dev.</th>
<th>Min</th>
<th>Max</th>
<th>Jarque-Bera</th>
</tr>
</thead>
<tbody>
<tr>
<td>LTD</td>
<td>0.30011</td>
<td>0.27039</td>
<td>0</td>
<td>1.65760</td>
<td>0.00000</td>
</tr>
<tr>
<td>STD</td>
<td>0.27078</td>
<td>0.21965</td>
<td>0.00203</td>
<td>1.41248</td>
<td>0.00000</td>
</tr>
<tr>
<td>ROA</td>
<td>0.01466</td>
<td>0.14153</td>
<td>-0.74900</td>
<td>0.99800</td>
<td>0.00000</td>
</tr>
<tr>
<td>BOARD</td>
<td>12.17508</td>
<td>4.86260</td>
<td>5</td>
<td>42</td>
<td>0.00000</td>
</tr>
<tr>
<td>GOVT</td>
<td>0.58387</td>
<td>-</td>
<td>0</td>
<td>1</td>
<td>0.00000</td>
</tr>
<tr>
<td>SIZE</td>
<td>15.06610</td>
<td>1.73456</td>
<td>11.6975</td>
<td>19.13310</td>
<td>0.00000</td>
</tr>
<tr>
<td>TANG</td>
<td>0.99135</td>
<td>0.02861</td>
<td>0.46711</td>
<td>1.00000</td>
<td>0.00000</td>
</tr>
<tr>
<td>GROW</td>
<td>0.10816</td>
<td>0.18083</td>
<td>-0.26491</td>
<td>1.25891</td>
<td>0.00000</td>
</tr>
<tr>
<td>LIQ</td>
<td>2.00384</td>
<td>1.83950</td>
<td>0.20575</td>
<td>13.00530</td>
<td>0.00000</td>
</tr>
<tr>
<td>CR</td>
<td>0.65842</td>
<td>-</td>
<td>0</td>
<td>1</td>
<td>0.00000</td>
</tr>
<tr>
<td>CPI</td>
<td>0.19789</td>
<td>0.22772</td>
<td>-0.12</td>
<td>0.67</td>
<td>0.00000</td>
</tr>
</tbody>
</table>

3.2. Correlation analysis

This sub-section presents the degree of association between pairs of variables revealing the linear relationship and whether any multicollinearity exists between the variables. The Pearson correlation test was utilized in this study to assess the degree of multi-collinearity. The analysis in Table 2 indicates that no two explanatory variables are strongly correlated with each other beyond the rule of thumb of 0.80. Furthermore, the variance inflation factor (VIF) has been calculated to test for multicollinearity. None of the VIFs were greater than 1; hence, there are no multi-collinearity issues to be concerned.

Table 2. Correlation analysis

<table>
<thead>
<tr>
<th>Variables</th>
<th>ROA</th>
<th>LTD</th>
<th>STD</th>
<th>SIZE</th>
<th>TANG</th>
<th>GROW</th>
<th>LIQ</th>
<th>BOARD</th>
<th>GOVT</th>
<th>CR</th>
<th>CPI</th>
</tr>
</thead>
<tbody>
<tr>
<td>ROA</td>
<td>1</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>LTD</td>
<td>–0.0746</td>
<td>1</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>STD</td>
<td>–0.2845</td>
<td>–0.2155</td>
<td>1</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>SIZE</td>
<td>0.0519</td>
<td>0.2284</td>
<td>–0.1942</td>
<td>1</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>TANG</td>
<td>–0.1081</td>
<td>–0.3544</td>
<td>0.0846</td>
<td>0.033</td>
<td>1</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>GROW</td>
<td>0.1962</td>
<td>–0.0392</td>
<td>–0.0311</td>
<td>0.0148</td>
<td>0.0659</td>
<td>1</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>LIQ</td>
<td>–0.0961</td>
<td>–0.176</td>
<td>–0.2114</td>
<td>–0.081</td>
<td>0.0538</td>
<td>–0.0713</td>
<td>1</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>BOARD</td>
<td>0.0591</td>
<td>0.0557</td>
<td>–0.0214</td>
<td>0.4736</td>
<td>0.0215</td>
<td>–0.0091</td>
<td>–0.0279</td>
<td>1</td>
<td>–</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>GOVT</td>
<td>–0.2305</td>
<td>–0.0167</td>
<td>0.2305</td>
<td>–0.0107</td>
<td>0.223</td>
<td>0.0496</td>
<td>0.0338</td>
<td>–0.1621</td>
<td>1</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>CR</td>
<td>0.1363</td>
<td>–0.0025</td>
<td>–0.0265</td>
<td>–0.0656</td>
<td>–0.1336</td>
<td>0.0374</td>
<td>0.0925</td>
<td>0.0238</td>
<td>–0.0761</td>
<td>1</td>
<td>–</td>
</tr>
<tr>
<td>CPI</td>
<td>0.117</td>
<td>0.1282</td>
<td>–0.0078</td>
<td>–0.017</td>
<td>–0.2213</td>
<td>0.0382</td>
<td>0.0000</td>
<td>–0.014</td>
<td>–0.0399</td>
<td>0.2694</td>
<td>1</td>
</tr>
</tbody>
</table>

3.3. Regression analysis

Table 3 displays the regression analysis results for the firm performance variables under the system GMM panel regression model. Column 1 excludes the government subsidy variable, while column 2 incorporates the government subsidy as a dummy variable. Inclusion of this variable has significant implications for the impact of debt levels on firm performance. This negative prediction is supported by other findings in developing economies, including Booth et al. (2001) who studied this relationship among firms in Brazil, Mexico, South Korea, Zimbabwe, and Malaysia, while Nyamita et al. (2015) reported an inverse relationship amongst Kenyan SOEs. Dawar (2014) also reported a negative relationship amongst Indian firms. The findings indicate that developing economies have significantly higher agency costs of debt than developed economies. Abor (2007) also found a negative relationship between long-term debt and firm performance, suggesting that agency issues may have led to the pursuit of very high debt policies, resulting in lower performance.

The results in Table 3 indicate that support by the government in the form of guarantees and subsidies has a significant negative effect on the financial performance of SOEs. The coefficients of short-term debt reflect a negative sign in the presence of government guarantees, which supports the position that increased guarantees by the government would encourage an increase in debt lev-
els. However, excessive amounts of debt beyond the target level will reduce firm performance. This proposition is supported by Thomas (2013) who suggested that an increase in debt increases firm performance until the optimal debt level is reached, but that excessive amounts will reduce firm performance. The significant negative prediction between government financial assistance and firm performance is supported by Assagaf et al. (2017) who posited that the subsidy policy reduces the cost of other economic sectors and can be viewed as a burden on government spending. They added that government subsidies encourage management to be less concerned about the level of financial strength, and more reliant on the subsidy to meet operational and investment needs. They can, hence, be considered as an unfavorable option for SOEs’ development. These authors found that government subsidies had a significant negative effect on the financial performance of Indonesian SOEs.

Government guarantees should reduce the cost of borrowing when SOEs require financing from the private banking sector or state-owned financial institutions such as the Development Bank of Southern Africa, the National Empowerment Fund and the Industrial Development Corporation (Dube, 2009). This should have strengthened the positive relationship between short-term debt financing, but instead, it changed the relationship to a negative one. This relationship provides evidence that government support encourages management to rely on such support to meet operational and investment needs rather than relying on their own balance sheets.

Consistent with dynamic stability, the coefficient of the lagged dependent variable (ROA) is less than 1. It is also statistically significant and positive, indicating a direct relationship between profitability in the previous year and the current profitability.

The results of this study meet the various requirements of the regression models, as shown in Table 3. In particular, for the GMM, the overall fitness of the result is good as indicated by the Wald test probability, AR(2) tests for autocorrelation confirms the absence of serial correlation, and the result of the Hansen test for overidentification of the instruments gives us the confidence that the instruments are not overidentified.

It can be concluded from the study results that government assistance to state-owned enterprises in South Africa has a negative effect on their financial performance. Therefore, null hypothesis, $H_0$, of the study was rejected, and the alternative hypothesis, $H_{1b}$: Government financial assistance is negatively related to financial performance, was accepted.

The findings indicate that the key variables affecting performance in this study include government guarantees together with leverage measured by short-term and long-term debt, growth opportunities, liquidity, non-debt tax shields, and corruption. If the government wants to improve the performance of these underperforming SOEs that are in continual need of bailouts, the focus should be on some of these key variables.

### Table 3. Regression analysis

<table>
<thead>
<tr>
<th>Variables</th>
<th>1</th>
<th>2</th>
</tr>
</thead>
<tbody>
<tr>
<td>L.ROA</td>
<td>0.584***</td>
<td>0.762***</td>
</tr>
<tr>
<td></td>
<td>(0.22)</td>
<td>(0.159)</td>
</tr>
<tr>
<td>LTD</td>
<td>0.105</td>
<td>−0.233*</td>
</tr>
<tr>
<td></td>
<td>(0.0656)</td>
<td>(0.165)</td>
</tr>
<tr>
<td>STD</td>
<td>0.648***</td>
<td>−0.134*</td>
</tr>
<tr>
<td></td>
<td>(0.317)</td>
<td>(0.236)</td>
</tr>
<tr>
<td>SIZE</td>
<td>1.84E–10</td>
<td>0.00555</td>
</tr>
<tr>
<td></td>
<td>(1.18E–10)</td>
<td>(0.0156)</td>
</tr>
<tr>
<td>TANG</td>
<td>−0.194</td>
<td>2.31</td>
</tr>
<tr>
<td></td>
<td>(0.64)</td>
<td>(2.004)</td>
</tr>
<tr>
<td>GROW</td>
<td>−0.0321</td>
<td>0.181***</td>
</tr>
<tr>
<td></td>
<td>(0.0535)</td>
<td>(0.0649)</td>
</tr>
<tr>
<td>LIQ</td>
<td>−0.0134</td>
<td>−0.0562**</td>
</tr>
<tr>
<td></td>
<td>(0.0132)</td>
<td>(0.0323)</td>
</tr>
<tr>
<td>BOARD</td>
<td>0.00345</td>
<td>−0.00202</td>
</tr>
<tr>
<td></td>
<td>(0.00255)</td>
<td>(0.00339)</td>
</tr>
<tr>
<td>GOVT</td>
<td>−</td>
<td>−0.0669**</td>
</tr>
<tr>
<td></td>
<td>−</td>
<td>(0.0744)</td>
</tr>
<tr>
<td>CR</td>
<td>−0.047</td>
<td>0.259</td>
</tr>
<tr>
<td></td>
<td>(0.182)</td>
<td>(0.029)</td>
</tr>
<tr>
<td>CPI</td>
<td>0.0189</td>
<td>−0.176***</td>
</tr>
<tr>
<td></td>
<td>(0.0588)</td>
<td>(0.029)</td>
</tr>
<tr>
<td>CONSTANT</td>
<td>−0.0863</td>
<td>−2.334</td>
</tr>
<tr>
<td></td>
<td>(0.645)</td>
<td>(2.282)</td>
</tr>
<tr>
<td>OBSERVATIONS</td>
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<td>292</td>
</tr>
<tr>
<td>NUMBER OF ID</td>
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</tr>
<tr>
<td>WALD STATS</td>
<td>0.000</td>
<td>0.000</td>
</tr>
<tr>
<td>NO OF INSTRUMENTS</td>
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<td>22</td>
</tr>
<tr>
<td>AR(2)</td>
<td>0.342</td>
<td>0.854</td>
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<tr>
<td>HANSEN STAT</td>
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<td>0.955</td>
</tr>
</tbody>
</table>

Note: Corrected standard errors in parentheses: *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$. 

Reference: Thomas (2013)
CONCLUSION

The main focus of this study was to investigate the effect of government guarantees on the financial performance of South African SOEs. The poor performance among SOEs has led to government intervention in the form of financial assistance such as grants, funds, rebates, and subsidies. The findings show that this has had a negative effect on the performance of these SOEs and has allowed poorly performing enterprises to survive. Of great concern is the inverse relationship, implying that despite government assistance, SOEs’ performance continues to decline. Misalignment between government support and performance could contribute to their poor performance. The findings show that government assistance is not a sound option for the development of SOEs as it causes management to be more reliant on such assistance to meet operational needs and to take advantage of growth opportunities rather than being concerned about the level of financial strength. Furthermore, the increase in government guarantees increases the use of debt, which places a strain on government finances.

The findings of this study could assist in alleviating the financial burden on the government. Furthermore, they highlight the key performance indicators that affect the performance of South African SOEs. This information could be useful to key stakeholders in their efforts to improve SOEs’ performance. Finally, the findings indicate that government assistance is hindering SOEs’ performance.

It is, thus, recommended that the government should review its financial assistance to SOEs and implement strict policies, whereby if performance continues to decline despite financial assistance, it should be revoked. Furthermore, government assistance to SOEs is not supported by any funding policy but is based on crisis situations and the seriousness of their financial needs. Parliament makes decisions to grant guarantees and National Treasury guided by the PFMA (Sadiki, 2015). While it is necessary for the government to assist SOEs to enable them to fulfill their role as catalysts of economic growth and development, it is equally important that a funding policy is formulated to guide such support. Policies should be put in place to restrict guarantees and subsidies to SOEs as they should be encouraged to enhance their strength by introducing innovation and best practices.

Future research can be conducted on the impact of the government guarantee value on performance. Furthermore, given the fact that government guarantees impose a serious burden on the fiscus, research can be conducted on the influence of issued and exposed government guarantees on central government debt.

AUTHOR CONTRIBUTIONS

Conceptualization: Ferina Marimuthu.
Data curation: Ferina Marimuthu.
Formal analysis: Ferina Marimuthu.
Funding acquisition: Ferina Marimuthu.
Investigation: Ferina Marimuthu.
Methodology: Ferina Marimuthu.
Project administration: Ferina Marimuthu.
Visualization: Ferina Marimuthu.
Writing – original draft: Ferina Marimuthu.
Writing – review & editing: Ferina Marimuthu.

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REFERENCES


26. Jardine, A. (2014). Financing practices on the JSE-an empirical test of the trade-off and pecking order theories of capital structure (M.Com (Finance)). University of


47. Thomas, A. E. (2013). Capital Structure and Financial Performance of Indian Cement Industry. BVIMR Management Edge, 6(2). Retrieved from https://web.a.ebscohost.com/abstractdirect=true&profile=ehost&scope=site&authtype=crawler&jrnid=9760431&AN=89748548&h=d%253cOCIH Sf%253bM3R90b99TtnKuk BQ%2bh%V0xiEsdwkrvB4E4PM s0Pl4GIPLY3AdQxFC841x3iQQ %3d%3c&r=8r8suitN=Admin WebAuth&r=8rsuitLoc=ErrCrlNotA uth&crllhashurl=login.aspx%3d&jrnl=09760431%26AN%3d89748545


49. Vu Van, H., & Bartolacci, F. (2017). Government support and firm financial performance: New evidence from a transitional economy. https://doi.org/10.21315/iber.t%3dtrue%26profile%3dehost%26cope%3dsite%26authtype%3dcrw ler%26jrnid%3d9760431%26AN%3 d89748545
