

Article

Camouflaged Compensation: Do South African Executives Increase Their Pay through Share Repurchases?

Gretha Steenkamp ^{1,*} , Nicolene Wesson ²  and Eon v. d. M. Smit ² 

¹ School of Accountancy, Stellenbosch University, Stellenbosch 7600, South Africa

² Stellenbosch Business School, Bellville 7530, South Africa

* Correspondence: gvn@sun.ac.za

Abstract: Increasingly, researchers in developed economies are associating the exponential growth in share repurchases with executives' desire to increase company share price and thus the value of their own share-based compensation. As research on this topic in emerging economies is sparse, this paper investigates the relationship between share repurchases and executive share-based compensation in South Africa. Certain weaknesses in South African corporate governance relating to share repurchases exacerbate the risk of camouflaged rent extraction and unethical behaviour. Regression analyses were executed, using data on share repurchases and executive share-based compensation variables for listed South African companies for the period 2002–2017. Statistically significant positive relationships were identified between share repurchases and executive share-based compensation. The results support the proposition that South African executives may be repurchasing shares in a bid to increase the value of their share-based compensation (in line with the managerial power theory), rather than maximising long-term shareholder value. This paper emphasises the need for improved corporate governance relating to share repurchases in South Africa. Given the income inequality in South Africa, the findings also have social justice implications.

Keywords: share repurchases; executive compensation; share-based incentives; managerial power theory; rent extraction; corporate governance



Citation: Steenkamp, Gretha, Nicolene Wesson, and Eon v. d. M. Smit. 2023. Camouflaged Compensation: Do South African Executives Increase Their Pay through Share Repurchases? *Journal of Risk and Financial Management* 16: 177. <https://doi.org/10.3390/jrfm16030177>

Academic Editors: Mohamed Saeudy and Khaldoon Albitar

Received: 7 February 2023

Revised: 2 March 2023

Accepted: 4 March 2023

Published: 7 March 2023



Copyright: © 2023 by the authors. Licensee MDPI, Basel, Switzerland. This article is an open access article distributed under the terms and conditions of the Creative Commons Attribution (CC BY) license (<https://creativecommons.org/licenses/by/4.0/>).

1. Introduction

Worldwide, share repurchase (buyback) activity is on the increase. The popularity of the practice, as well as the impact of the 2007–2009 global financial crisis, has led to questions being asked about the true motivation behind share repurchases. Share repurchases can be used to artificially increase both the share price and the earnings per share (EPS) (Chan et al. 2010; Cook and Zhang 2022; Farrell et al. 2013; Liu and Swanson 2016; Ndayisaba and Ahmed 2021). More specifically, in the absence of appropriate disclosure requirements and other corporate governance measures, share repurchases could be used by executive directors (hereafter called executives) to increase the value of their share-based compensation and extract camouflaged rents from the company (Edmans et al. 2022; Griffin and Zhu 2010; Lee et al. 2020; Wesson et al. 2018). While such rent extraction has been evidenced in developed economies, it has also become important to investigate this issue in the African context. South Africa was specifically identified as a relevant research setting given the major income inequalities that exist in this country (Viviers and Mans-Kemp 2021)—which might be exacerbated if rent-extraction occurs. Furthermore, South Africa possesses characteristics of both an emerging economy (represented by low growth and high unemployment) and a developed economy (with a sophisticated stock exchange and corporate governance framework) (Steenkamp and Wesson 2020a).

Although South African corporate governance is, in general, on par with that of developed economies, it lags behind in relation to share repurchases (Steenkamp and Wesson 2020a). Globally, it is common practice to require the announcement of all repurchase activity, either immediately or periodically in arrears (Kim et al. 2005). In South Africa, however,

companies listed on the Johannesburg Stock Exchange (JSE) only need to announce general (open market) repurchases when 3% of outstanding shares have been repurchased (JSE 2017). This requirement led to only 55% of share repurchase value being announced during the 2010–2017 period (Steenkamp and Wesson 2020a) and shareholders having incomplete information about the timing and extent of share repurchases in South Africa. Insufficient disclosure can camouflage attempts by executives to increase the value of their share-based compensation through share repurchases.

In order to better understand whether additional regulation and disclosure regarding share repurchases and their impact on executive share-based compensation may be warranted, the purpose of this paper was to investigate the relationship between share repurchases and executive share-based compensation in South Africa. The paper found a statistically significant positive relationship between share repurchase and executive share-based compensation variables for listed South Africa companies during the 2002–2017 period. The results provide evidence of camouflaged rent-extraction by executives through share repurchases (in line with the managerial power theory) and warrants a call for additional corporate governance measures to protect the interests of shareholders and other company stakeholders.

The remainder of the paper is structured as follows: Firstly, the relevant literature is reviewed. Thereafter, the methodology is described, followed by a discussion of the results. In the final section, the authors draw a conclusion and provide recommendations.

2. Literature Review

Researchers throughout the world are beginning to wonder if the growth in share repurchase activity is related to executive share-based compensation (Cook and Zhang 2022; Edmans et al. 2022; Geiler and Renneboog 2016; Lazonick 2014). The vesting of share-based compensation, which frequently depends on vesting constraints connected to share price and/or EPS, can be facilitated through share repurchases because they can enhance both the share price and the EPS figure (Cook and Zhang 2022; Lazonick 2014; Qu et al. 2022; Wesson et al. 2018; Young and Yang 2011). The value that executives realise from share-based compensation also naturally increases when the share price rises as a result of a share repurchase. The literature review first considers share repurchases and executive share-based compensation separately, whereafter the possible link between the two is addressed.

2.1. Share Repurchases

When a company buys back shares that it has already issued, the practice is known as a share repurchase (also called share buybacks or treasury shares) (Steenkamp and Wesson 2020a). Share repurchases in South Africa were legalised in 1999 and increased substantially between 2005 and 2009 (Wesson et al. 2015), although they have slowed down after the global financial crisis of 2007–2009 (Steenkamp and Wesson 2020a). In accordance with South African law, the holding company itself, as well as its controlled subsidiaries and share trusts, may repurchase holding company shares. While shares purchased by subsidiaries and share trusts are kept in treasury, shares purchased by the holding company itself are cancelled and restored to authorised but unissued capital (Steenkamp and Wesson 2020a). Repurchasing through subsidiaries and share trusts allows for some future action flexibility because treasury shares can be used to complete a business merger, pay the share-based compensation due to employees, or be sold.

Globally, open market share repurchases are the dominant repurchase type; however, both open market and private offers are common in South Africa (Steenkamp and Wesson 2020a). The three repurchase types that exist in the South African environment are explained below (Vermeulen 2014; Wesson et al. 2015):

- Open market or auction repurchases, also known as general repurchases (this happens when the shares are repurchased on the open market at the going rate);

- Tender offer repurchases, also known as pro rata specific repurchases (this occurs when a portion of the shares owned by each present shareholder may be bought back);
- Private offer repurchases, often known as other specific repurchases (this happens when shares of a certain targeted set of shareholders are bought back).

According to the JSE Listing Requirements, specific repurchases must be announced via the JSE's Stock Exchange News Service (SENS) as soon as the terms are set (JSE 2017), i.e., before they take place, to allow for monitoring. However, general repurchases are not required to be announced until 3% of the outstanding shares of that class have been repurchased (JSE 2017). While general repurchase requirements are simpler to meet, some share repurchases (i.e., those that total less than 3% cumulatively) are not reported via SENS (Steenkamp and Wesson 2020a). However, there is considerable inconsistency in how the regulation is applied: some companies interpret it as 3% per year, while others see it as a cumulative requirement that is not restricted to a single year, which is also the JSE's official position (Steenkamp and Wesson 2020a). The 3% restriction prevents SENS notifications from giving a complete account of all general share repurchases conducted by listed companies. Furthermore, because general share repurchases are sometimes only reported years after the fact, stakeholders are unaware of the precise timing of such transactions. South Africa's present announcement requirements differ from those of most other countries with sophisticated stock exchanges, where daily, weekly, monthly, or quarterly announcements relating to the actual number and value of shares repurchased are the norm (Banyi et al. 2008; Kim et al. 2005).

Between 2002 and 2017, there were two significant changes in the tax treatment of share repurchases (and dividends as an alternative payout to share repurchases). First, as of 1 January 2011, when the definition of what qualifies as a "dividend" changed, general repurchases were no longer deemed dividends (Nel 2018). Second, on 1 April 2012, a dividends tax on the beneficial shareholder superseded secondary taxation on companies (STC), which had applied to all "dividends" paid by companies (including those share repurchases that qualified as dividends) (Nel and Wesson 2019). Subsidiary repurchases were therefore the most tax-efficient transaction prior to 1 January 2011, as the repurchaser did not owe any taxes. Between 1 January 2011 and 30 March 2012, only specific repurchases made by the holding company qualified for STC; subsidiary repurchases and general repurchases made by the holding company did not. Since the adoption of dividends tax on 1 April 2012, share repurchases made by all repurchasing entities (including both general and specific repurchases) have had no tax consequences for the repurchasing entity because the beneficial owner of the share may have been subject to tax (Nel 2018). The tax changes may have influenced the number of share repurchases as well as the choice between paying dividends and carrying out a share repurchase.

2.2. Executive Share-Based Compensation

According to the agency theory, which is rooted in economics and finance, a principal (such as a company shareholder) can choose an agent to act on their behalf (Jensen and Meckling 1976). In a company, the shareholders (as owners or principals) appoint a management team, which is often led by executives, to operate the company on their behalf and in their best interests (Jensen and Meckling 1976). However, the separation of ownership and control creates agency risk, as executives and shareholders often have conflicting goals and aspirations (Qu et al. 2022). While shareholders care about a company's long-term viability and value, executives may be more concerned with their immediate needs, such as their reputation, personal finances, and employment security (Jan et al. 2021). As such, the risk arises that executives could use their power in a company to ensure that company actions are in their best interest, rather than in the best interest of the shareholders (Jan et al. 2021). Because of this risk, it is necessary to regulate executives through corporate governance.

To further reduce agency risk, the financial interests of executives and shareholders could be aligned through introducing share-based compensation in executives' packages (Ndayisaba and Ahmed 2021; Pepper and Gore 2014; Qu et al. 2022). Executive share-based

compensation has become more common in the last two decades and can be defined as any long-term incentive paid to executives of which the value depends on the share price of the company. Some share-based compensation schemes are classified as appreciation schemes as they reward only for the increase in the share price (examples include share options and share appreciation rights). Others, such as deferred bonus schemes and contingent share plans, are classified as full quantum schemes since their compensation is based on the entire value of the share (Steenkamp and Wesson 2018a).

In contrast to agency theory, managerial power theory contends that some executives have the ability to control their own compensation due to personal traits or organisational dynamics (Bebchuk et al. 2002). Based on this theory, the inclusion of share-based compensation in executive packages could result in the extraction of rents, or payments beyond the optimal level, from the company (Avallone et al. 2014; Bebchuk et al. 2002). Compensation contracts stop being effective in reducing agency costs when shareholders are unaware of rent extraction owing to poor corporate governance (camouflaged rent extraction) (Bebchuk et al. 2002; Goergen and Renneboog 2011).

2.3. *The Relationship between Repurchases and Executive Share-Based Compensation*

The relationship between share repurchases and executive share-based compensation has not yet been extensively researched in South Africa. Earlier studies in other countries (Aboody and Kasznik 2008; Bhargava 2013; Burns et al. 2015; De Cesari and Ozkan 2015; Department for Business, Energy and Industrial Strategy 2019; Edmans et al. 2022; Fenn and Liang 2001; Gao and Kronlund 2020; Geiler and Renneboog 2016; Jolls 1998; Kahle 2002; Lamba and Miranda 2010; Moore 2018; Ndayisaba and Ahmed 2021; Weisbenner 2004; Young and Yang 2011) mostly found a positive statistically significant relationship between share repurchase and executive share-based compensation variables. This is also the underlying assumption of the current paper, which contends that executives may be driving up share prices by repurchasing shares in order to boost the value of their own share-based compensation.

Most analyses conducted on data prior to 2010 used the number of share-based instruments held by executives as a proxy for share-based compensation (De Cesari and Ozkan 2015; Fenn and Liang 2001; Jolls 1998; Kahle 2002; Lamba and Miranda 2010; Weisbenner 2004). Moreover, these studies only took into account the quantity of share options owned by executives as an independent variable because share options were the most common incentive type at the time these studies were conducted. In contrast to full quantum schemes, where instruments are mandatorily exercised on the vesting date and where an executive cannot accumulate large numbers of unexercised instruments, share options typically have long exercise periods, so the number of share options that executives were able to accumulate could become quite large. Since the payment of dividends results in a reduction in the company share price, which is not advantageous to the holder of an option, executives who own large numbers of share options are likely to prefer share repurchases over dividend payments (Jolls 1998). The majority of the initial studies (Fenn and Liang 2001; Jolls 1998; Kahle 2002; Lamba and Miranda 2010) found a positive correlation between the number of executive share options held and a share repurchase's variable (decision to repurchase, share repurchase value, or the number of shares repurchased).

More recent studies (Edmans et al. 2022; Gao and Kronlund 2020; Moore 2018) have focused on the share-based instruments exercised or vested. Edmans et al. (2022) and Moore (2018) included all types of share-based incentives, given that the usage of share-based incentives other than share options have become more popular in the last decade, and found a positive relationship between share repurchases and the number of share-based instruments exercised or vested. Gao and Kronlund (2020) only included share options and did not find a positive relationship between share repurchases and share options. This emphasises the importance of including all types of share-based incentives when conducting research in this field.

Young and Yang (2011) reported an association between executive share-based compensation with EPS-related vesting constraints and share repurchases. However, these authors only considered data from the United Kingdom up to 2006, a time when EPS-related constraints would not have been especially prevalent. A later study conducted in the United Kingdom that looked at the years 2009 through 2016 found no connection between share-based compensation that included vesting constraints for total shareholder return (TSR) and/or EPS and share repurchases (Department for Business, Energy and Industrial Strategy 2019).

3. Research Methodology

Quantitative panel data on share repurchases and executive share-based compensation were gathered and subsequently statistically analysed using appropriate regression models. Share repurchases were employed as the dependent variable, while executive share-based compensation was the independent variable of interest. To determine, *ceteris paribus*, the impact of executive share-based compensation on share repurchases, other factors were included as control variables. Section 3.1 outlines the research population, followed by details of the selected variables and the data collection methods (Section 3.2) and a discussion of the regression models employed (Section 3.3).

3.1. Research Population

Wesson et al. (2015) compiled the first comprehensive database of share repurchase activity in South Africa, covering the 1999–2009 period. In the present paper, it was decided to continue with the Wesson et al. (2015) research population. The target period for data collection was set as 2002 to 2017 and delisted companies were included up to their delisting date to avoid survivorship bias. Inclusion criteria were therefore determined as being all companies that:

- had primary listings of their ordinary and/or N-class shares on the JSE's Main Board, except those in the Basic Materials and Financial industries; and
- had been listed for at least three years during the 2002–2017 period.

3.2. Variables Employed and Data Collection

Measurement of the dependent, independent and control variables was informed by earlier studies (Aboody and Kasznik 2008; Bhargava 2013; Burns et al. 2015; De Cesari and Ozkan 2015; Department for Business, Energy and Industrial Strategy 2019; Edmans et al. 2022; Fenn and Liang 2001; Gao and Kronlund 2020; Geiler and Renneboog 2016; Jolls 1998; Kahle 2002; Lamba and Miranda 2010; Moore 2018; Weisbenner 2004; Young and Yang 2011) and data on each variable were collected for every company in each year of their listing on the JSE.

3.2.1. Dependent Variables

There were two different kinds of dependent variables used: a binary variable that represented a company's decision to repurchase shares in a given year (or not), and a ratio variable that represented the amount of money spent on share repurchases in a given year, scaled by market capitalisation. The latter ratio-scale dependent variable also paid attention to specific subsets of repurchase value, including the repurchase value attributable to specific repurchasing entities (the holding company repurchasing from third parties and subsidiaries repurchasing), the repurchase value connected to particular repurchasing types (general repurchases and specific repurchases), and the transparency of share repurchasing (the announced and unannounced general repurchases). The lagged market capitalisation, which was gathered from the IRESS Expert financial database, was utilised to scale the ratio values involved.

The information had to be gathered directly from the companies' annual financial statements because no commercial financial database offers comprehensive and precise information on the number of shares repurchased by JSE-listed companies. Unfortunately,

the majority of the financial statements did not explicitly specify how many shares were bought back and at which value. Reconciliations from the financial statements' data were required to make sure that every share repurchase was appropriately recorded. The following were reconciled between opening balance number of shares, shares issued, shares repurchased, and closing balance number of shares: (i) shares in issuance by the holding company; (ii) holding company shares held by subsidiaries and consolidated share trusts (treasury shares); and (iii) shares outstanding in the group (shares in issuance by the holding company reduced by treasury shares held by subsidiaries and consolidated share trusts). Once the reconciliations had been completed, the number of shares repurchased by the holding company itself as well as subsidiaries were determined. Treasury shares held by subsidiaries and consolidated share trusts can be repurchased by the holding company itself (and then cancelled), but such intra-group transactions were not identified as repurchases for this paper, to allow comparison with previous global studies. Further analyses were carried out to identify the repurchase type involved (specific versus general) and whether the repurchase was announced via SENS.

In deciding on the most accurate rand value for the share repurchases identified (as explained in the prior paragraph), the values reported in the directors' report, statement of changes in equity, statement of cash flows, share capital notes and SENS announcements were considered. After the rand value contained in all the available sources had been documented, the most reliable value was chosen. The end result of this approach was the construction of a database on share repurchase activities "per-company year".

3.2.2. Independent Variables

In prior research, the number of executive share-based instruments, the value of executive share-based instruments, or the application of vesting constraints based on EPS and/or TSR have all been used as independent variables. The value of share-based compensation is not an appropriate independent variable in the South African context since it is not adequately disclosed in annual financial statements of companies and is not accessible via commercial financial databases (Steenkamp and Wesson 2018a, 2020b). In light of this, it was decided to include two ratio-scale independent variables that relate to executive share-based compensation: the number of share-based instruments that were exercised during the year and the number of share-based instruments that were held at year end, both scaled by the number of shares issued by the holding company. A third (binary) independent variable was included in addition to the two ratio-scale variables to indicate whether the company employed vesting constraints related to share price, TSR, and/or EPS.

The measurement of the independent variables included all share-based instruments, not only share options. This was because, in the later years covered by this research, schemes other than share options became more prevalent and most recent studies likewise included all instruments. This paper includes the share-based compensation that all executives, not only the chief executive officer, received. Despite the fact that the chief executive officer is likely the most influential executive, all executives would be involved in the decision to repurchase shares and their individual financial interests should thus be considered (De Cesari and Ozkan 2015).

The data on executive share-based compensation were primarily collected using the IRESS financial database (product: Director Search), on a per executive basis. In the case of incomplete or inaccurate data from IRESS, discrepancies were updated based on the information disclosed in the annual financial statements. Thus, a comprehensive "per-executive" database on executive share-based compensation was created, containing 8837 data line items. This "per-executive" database was then condensed to a "per-company year" database on share-based compensation, containing 2312 line items, and combined with data on share repurchases, which was already in the "per-company year" format.

3.2.3. Control Variables

Control variables employed in previous studies were examined in depth to decide whether these controls should also be included in this paper. It was decided to include all control variables employed by the majority of previous studies (Aboody and Kasznik 2008; Bhargava 2013; Burns et al. 2015; De Cesari and Ozkan 2015; Department for Business, Energy and Industrial Strategy 2019; Edmans et al. 2022; Fenn and Liang 2001; Gao and Kronlund 2020; Geiler and Renneboog 2016; Jolls 1998; Kahle 2002; Lamba and Miranda 2010; Moore 2018; Weisbenner 2004; Young and Yang 2011). These were: share price performance (measured as prior-year change in share price as percentage of opening share price), company undervaluation (measured as the lagged market-to-book ratio), dividend policy (measured as dividend yield), company size (measured as lagged market capitalisation), leverage (measured as lagged debt-to-assets ratio), company performance (measured as the return on assets ratio) and cash (measured as available cash flow scaled by assets). Shares owned by directors (measured as the percentage of company shares owned by directors) was also added as control variable given that most of the previous studies that focussed solely on share repurchases (most focused on payout policy in general) controlled for this (Department for Business, Energy and Industrial Strategy 2019; Moore 2018). The measurement of each of the factors was based on the measurement basis employed in previous studies and data availability in the South African context. All control variables were collected using the IRESS Expert financial database.

3.3. Multivariate Regression Techniques Performed

In order to assess the association between share repurchases and executive share-based compensation, all multivariate methodologies utilised in prior studies were taken into consideration. While some prior research employed a probit regression model or a linear probability model, the technique most frequently used when the dependent variable was the decision to repurchase (a binary dependent variable) was the binary logistic regression model (logit). The logit model is an ordinary least squares regression with a binary dependent variable and was chosen to analyse the binary dependent variable “decision to repurchase” in this paper because it was used in most prior studies with a binary dependent variable.

A left-censored tobit regression model was most frequently utilised in prior studies that considered the value spent on repurchases (a ratio-scale dependent variable). The value of share purchases as a proportion of market capitalisation, the dependent variable, will always fall between zero and one (i.e., it is a percentage or a fraction). When the dependent variable is a fraction, Wooldridge (2010) claims that it is possible to use a two-limit tobit (censored at zero and one) as an econometric model. However, he cautions that this only produces valid findings when clustering occurs at both bounds (i.e., at both zero and one). When the dependent variable only clusters at the zero point, as it does in the population of this study, using a two-limit tobit is inappropriate (Wooldridge 2010). Nevertheless, Wooldridge (2010) suggests an alternative model—the fractional regression model—when the dependent variable is naturally bounded between one and zero, with clustering at a single boundary. The fractional regression model models a continuous dependent variable, which naturally ranges between zero and one (expressed as a percentage), using quasi-maximum likelihood estimation and a logistic function (Wooldridge 2010). Consequently, the fractional regression model was chosen as the main model to examine the association between executive share-based compensation and share repurchase value expressed as a percentage of market capitalisation. Nonetheless, it was decided to apply a tobit regression as a robustness check since the tobit model was the most prevalent technique employed in prior investigations.

All econometric analyses were conducted using Stata 15.0. Year-fixed effects (dummies) were included in all regressions executed. Company-fixed effects were also included, using the Mundlak approach (Mundlak 1978). Standard errors were robust to heteroscedasticity

and clustered at company level when available in the regression model being employed (in Stata the logit and tobit models do not allow for clustering by company).

4. Results and Discussion

Information on the decision to repurchase shares were available for 2392 company years, while only 2312 company years of data were available on executive share-based compensation. Company years for which no executive share-based compensation data were available were excluded from the regressions executed.

4.1. Descriptive Statistics on Variables Employed

Further information regarding the variables utilised as dependent, independent, and control variables, as well as the abbreviations and descriptive statistics for the variables, can be seen in Table 1. The company name and year were also gathered in addition to the variables listed in Table 1, to be utilised as controls for potential fixed effects in the data.

Table 1. Descriptive statistics on variables employed in regression analyses.

Variable Name	Description	Abbreviation	Observations	Minimum	Maximum	Mean	Standard Deviation
<i>Dependent variables</i>							
Decision to repurchase	Binary variable taking on the value “one” if a repurchase did occur, and “zero” if no repurchase occurred	Y_Yesno	2312	0	1	0.27	0.44
Total repurchases	Rand value spent on repurchases scaled by lagged market capitalisation	Y_Value	2246	0	1	0.01	0.05
Holding company repurchases	Rand value spent on repurchases by holding company scaled by lagged market capitalisation	Y_Cpy	2246	0	0.76	0.00	0.03
Subsidiary repurchases	Rand value spent on repurchases by subsidiaries, scaled by lagged market capitalisation	Y_Sub	2246	0	1	0.01	0.03
General repurchases	Rand value spent on general repurchases, scaled by lagged market capitalisation	Y_Gen	2246	0	1	0.01	0.03
Other specific repurchases	Rand value spent on specific repurchases (excluding pro rata repurchases) scaled by lagged market capitalisation	Y_Specother	2246	0	0.93	0.00	0.03
Announced general repurchases	Rand value spent on announced general repurchases, scaled by lagged market capitalisation	Y_Anngen	2246	0	0.21	0.00	0.01
Unannounced general repurchases	Rand value spent on unannounced general repurchases, scaled by lagged market capitalisation	Y_Unanngen	2246	0	1	0.00	0.02
<i>Independent variables</i>							
Share-based instruments exercised by executives	Number of share-based instruments exercised by executives during the year, scaled by the number of shares in issuance by the holding company at year end	X_Exercised	2312	0	0.11	0.00	0.01

Table 1. Cont.

Variable Name	Description	Abbreviation	Observations	Minimum	Maximum	Mean	Standard Deviation
Share-based instruments held at year end by executives	Number of share-based instruments held by executives at year end, scaled by the number of shares in issuance by the holding company at year end	X_Closing	2312	0	0.42	0.01	0.02
Vesting constraints linked to share price, TSR and/or EPS	Binary variable taking on the value “one” if a company employed vesting constraints linked to share price, TSR and/or EPS, or “zero” if not	X_TSREPS	2312	0.00	1.00	0.15	0.36
<i>Control variables</i>							
Share price performance	Prior-year change in share price, expressed as percentage increase or decrease based on opening share price in prior period	XL_Returnshare	2114	−0.99	119.2	0.32	2.79
Market-to-book	Market-to-book ratio (lagged)	XL_Marketbook	2181	0.00	120.18	2.35	3.72
Dividend yield	Dividend yield	X_Divyield	2251	0.00	3520	4.87	74.93
Market capitalisation	Logged market capitalisation of the company (lagged)	XL_Lmarketcap	2246	6.14	11.97	9.07	0.96
Shares owned by directors	Number of holding company shares owned by directors, scaled by the number of shares in issuance by the holding company at year end	X_Directshares	2312	0.00	0.96	0.14	0.18
Debt-to-assets	Debt-to-assets ratio (lagged)	XL_Debtassets	2.243	0.00	2.33	0.53	0.24
Return on assets	Return on assets ratio	X_ROA	2305	−198.08	205.56	12.89	16.81
Cash flow	Available cash flow, scaled by assets	X_Cash flow	2301	−2.00	1.67	0.10	0.12

Based on the minimum and maximum values as well as the standard deviations of the individual variables, it became clear that some variables in Table 1 contain outliers. Particularly, the maximum values of X_Divyield, XL_Marketbook, and XL_Returnshare appear to be excessively high, which may be the result of measurement error (i.e., inaccurate capturing by IRESS Expert). In order to lessen the impact of the outliers, it was decided to winsorise these three variables. For each independent and control variable, a variance inflation factor was determined (Wooldridge 2014). The range of the variance inflation factors, from 1.06 to 1.58, suggested that multicollinearity was not a concern.

4.2. Regression on the Decision to Repurchase

In Table 2, the logit regression results relating to the binary dependent variable (decision to repurchase) are shown.

Table 2 demonstrates that, between 2002 and 2017, the decision to repurchase was positively correlated with the number of share-based instruments exercised in a year (X_Exercised). The marginal effect was 3.18, indicating that as the number of instruments exercised (as a proportion of shares issued by the holding company) grew by one percentage point, the probability of a repurchase increased by 3.18 percentage points. The results are consistent with recent research conducted in other countries, which indicated that the

exercise (or vesting) of executive share-based instruments increased the likelihood of a share repurchase occurring (Edmans et al. 2022; Moore 2018).

There was also a positive correlation between the number of share-based instruments held by executives at year end (X_Closing) and the likelihood of a repurchase. According to research by Jolls (1998) and Kahle (2002), executives who retain a substantial number of unused share options favour share repurchases over dividend increases, which increases the possibility that shares will be repurchased. These studies, which were conducted prior to 2000 or in the early 2000s, only included share options as a share-based instrument type because at the time they were the most common type of scheme. Considering both full quantum and appreciation scheme instruments, Edmans et al. (2022) examined the relationship between the decision to repurchase and all share-based instruments held by executives and reported a positive correlation between the decision to repurchase and the instruments that had yet to vest, but no significant correlation between the decision to repurchase and the instruments that had already vested (Edmans et al. 2022).

Table 2. Regression results on the decision to repurchase.

Independent/Control Variable	Decision to Repurchase (2002–2017)		
	Coef	Marg	Sig
X_Execised	24.82	3.18	**
X_Closing	9.63	1.23	*
X_TSREPS	0.21	0.03	
XL_Returnshare ^	−0.27	−0.04	**
XL_Marketbook ^	−0.01	−0.00	
X_Divyield ^	0.08	0.01	***
XL_Lmarketcap	0.25	0.03	
X_Directshares	1.48	0.19	*
XL_Debtassets	−2.55	−0.33	***
X_ROA	0.00	0.00	
X_Cash flow	2.82	0.36	***
Constant	−7.08	n/a	***
Company-fixed effects		Yes, Mundlak	
Year dummies		Yes	
Standard error		Robust, not clustered	
Number of observations		2077	
Chi-square		109.884	
Prob > chi2		0.000	

Note. Data gathered from IRESS and annual financial statements. Marg denotes the marginal effects of the coefficient. Dependent variable: decision to repurchase. Independent variables: number of share-based instruments exercised by executives (X_Execised), number of share-based instruments held by executives at year end (X_Closing), whether vesting constraints pertain to share price, TSR and/or EPS (X_TSREPS). Control variables as per Table 1, while ^ shows winsorisation. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.10$.

There were no statistically significant associations found between a company’s use of vesting constraints related to share price, TSR, and/or EPS (X_TSREPS) and the likelihood of a share repurchase being carried out. The absence of a substantial association is in line with the Department for Business, Energy and Industrial Strategy’s most recent findings (2019), but not with Young and Yang’s previous findings (2011), which only took EPS-related variables into account.

4.3. Regression on Repurchase Value

In this section, the results from the regressions executed on the ratio-scale dependent variable “rand value spent on repurchases” are discussed. In Table 3, several regression models are displayed: Model 1 reports the results relating to total repurchase value over the entire 2002–2017 period, while Model 2 reports the results when only employing the repurchase value attributable to subsidiaries (in contrast to the holding company itself) as the dependent variable. Model 3 shows the results when using only the repurchase value

attributable to general repurchases (in contrast to specific repurchases) as the dependent variable and Model 4 displays the results when the dependent variable is limited to the rand value attributable to announced general repurchases (in contrast to unannounced general repurchases).

Table 3. Regression results on repurchase value using the fractional regression model (2002–2017).

Independent/Control Variable	Model 1 (All Repurchases)			Model 2 (Subsidiary Repurchases Only)			Model 3 (General Repurchases Only)			Model 4 (Announced General Repurchases Only)		
	Coef	Marg	Sig	Coef	Marg	Sig	Coef	Marg	Sig	Coef	Marg	Sig
X_Execised	12.47	0.121		29.08	0.138	***	17.23	0.089	***	25.08	0.072	***
X_Closing	4.55	0.044		4.97	0.024		0.25	0.001		−0.38	−0.001	
X_TSREPS	0.11	0.001		−0.01	−0.000		0.10	0.000		−0.34	−0.001	
XL_Returnshare ^	−0.15	−0.001		0.08	0.000		−0.07	−0.000		−0.18	−0.001	
XL_Marketbook ^	−0.11	−0.001		−0.14	−0.001	**	−0.21	−0.001	***	−0.35	−0.001	**
X_Divyield ^	0.03	0.000		0.04	0.000		0.02	0.000		0.00	0.000	
XL_Lmarketcap	−0.66	−0.006	*	−0.31	−0.001		−0.46	−0.002		−0.55	−0.002	
X_Directshares	−1.94	−0.019	*	−0.82	−0.004		−0.11	−0.001		−1.39	−0.004	
XL_Debtassets	−2.89	−0.028	***	−2.48	−0.012	***	−2.76	−0.014	***	−3.45	−0.010	***
X_ROA	0.00	0.000		−0.00	−0.000		0.01	0.000	**	0.01	0.000	**
X_Cash flow	1.42	0.014	**	0.51	0.002		0.95	0.025		1.02	0.003	
Constant	−4.95	n/a	***	−6.57	n/a	***	−4.99	n/a	***	−4.23	n/a	**
Company-fixed effects	Yes, Mundlak			Yes, Mundlak			Yes, Mundlak			Yes, Mundlak		
Year dummies	Yes			Yes			Yes			Yes		
Robust standard errors, clustered by company	Yes			Yes			Yes			Yes		
Observations	2077			2077			2077			2077		
Chi-square	462.90			490.52			729.72			597.74		
Prob > chi2	0.00			0.00			0.00			0.00		

Note. Data gathered from IRESS and annual financial statements. Marg denotes the marginal effects of the coefficient. Dependent variable: share repurchase value. Independent variables: number of share-based instruments exercised by executives during the year (X_Execised), number of share-based instruments held by executives at year end (X_Closing), whether vesting constraints pertain to share price, TSR and/or EPS (X_TSREPS). Control variables as per Table 1, while ^ shows winsorisation. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.10$.

Using the fractional regression model, no significant link between share repurchase value and executive share-based compensation was identified when the total repurchase value spent by all repurchasing companies and on all repurchase types was considered for the 2002–2017 period (Model 1 in Table 3). The share repurchase value was significantly positively correlated with the number of executive share-based instruments that were held at year end (X_Closing) and that were exercised (X_Execised) according to the tobit model (used as robustness test). However, due to the clustering of dependent variable observation values near zero, some caution must be employed when interpreting the tobit model’s conclusions. This might also have distorted the outcomes of earlier investigations that used the tobit model (Burns et al. 2015; De Cesari and Ozkan 2015; Fenn and Liang 2001; Lamba and Miranda 2010; Young and Yang 2011). An ordinary least squares regression was carried out as an additional robustness check and did not yield any statistically significant results. Based on the outcomes of the most trustworthy model, the fractional regression model, it was determined that no meaningful association between share repurchase value and executive share-based compensation existed in South Africa when considering the 2002–2017 period as a whole.

This study’s failure to detect a significant relationship between executive share-based compensation and share repurchase value in South Africa over the entire 2002–2017 period, in contrast to earlier studies conducted in other countries, may be related to the peculiarities of the country’s share repurchase environment. In South Africa, both the holding company and subsidiaries may repurchase holding company shares, although globally, only the holding company itself typically can do so (Stenkamp and Wesson 2020a). In addition,

South African companies frequently use both general and specific repurchases (Steenkamp and Wesson 2020a), but open market (general) repurchases are the most common type globally. The correlation between executive share-based compensation and share repurchase value that was previously established in research may only apply to open market (general) repurchases. The holding company versus subsidiaries, general versus specific repurchases, and whether or not the repurchase was announced via SENS were all factors that were considered essential in determining the association between share repurchase value and executive share-based compensation.

Regressions focusing only on certain subsets of repurchase value are also reported in Table 3. The regressions relating to repurchase value attributable to the holding company, specific repurchases and unannounced general repurchases are not tabled as no significant relationships were noted between such repurchase value and executive share-based compensation. However, the repurchase value attributable to subsidiaries, general repurchases and announced general repurchases did produce significant results and these regressions are reported as Models 2 to 4 in Table 3.

Model 2 in Table 3 reports a significant positive relationship between subsidiary repurchases and the number of share-based instruments exercised by executives (X_Execised). Subsidiary repurchases provide flexibility as the shares repurchased by subsidiaries are not cancelled, but kept in treasury (Steenkamp and Wesson 2020a). Subsidiary repurchases could be seen as similar to treasury share repurchases that occur in other jurisdictions where the holding company repurchases, but the shares are not cancelled.

According to Model 3 in Table 3, there was a significant positive correlation between general repurchases and the number of share-based instruments exercised by executives (X_Execised). Worldwide, the majority of share repurchases are general (open market) share repurchases (Wesson et al. 2015). As a result, the conclusion that general share repurchases are related to executive share-based compensation is consistent with earlier studies in other countries. Executives find general repurchases simpler to conduct in the South African regulatory environment. Typically, shareholders annually (at the annual general meeting) authorise directors to conduct general share repurchases as they deem it fit in the coming year. Specific share repurchases, on the other hand, are more difficult to carry out because each repurchase requires shareholder approval before it can be carried out.

In an effort to boost the share price and EPS figure and thereby increase the value realised from their own share-based compensation, executives could therefore easily carry out general share repurchases in the period before their share-based instruments are due to vest or when they plan to exercise their share-based instruments. One or both of the following mechanisms could cause the share price to rise: either the repurchase would increase demand for the company's shares, driving up the share price due to supply and demand forces, or the share repurchase would be announced on the SENS system, driving up the share price due to the signalling effect. It is possible to determine if both or just one of these factors appear to be at play by splitting the general repurchases into those that were and were not announced on SENS. According to the findings in Model 4 (Table 3), executive share-based compensation was associated with announced general repurchases as opposed to those that were unannounced. This paints a picture of executives carrying out and announcing general share repurchases before they are scheduled to exercise share-based instruments, to profit from an increased share price resulting from both an increased demand for company shares and the signalling effect of the announcement.

Although many earlier studies conducted in other countries did find a significant relationship between total share repurchase value and executive share-based compensation, a final explanation for Model 1's (in Table 3) failure to find such a relationship may lie in the fact that a lengthy period was examined (2002–2017). Most prior studies focused on shorter periods. As the global financial crisis occurred during the study period, it was anticipated that the relationship would be different before (2002–2006), during (2007–2009), and after the crisis (2010–2017). Table 4 examines the impact of the global financial crisis.

Table 4 shows distinct variations over time when considering the association between share repurchase value and executive share-based compensation. A positive correlation between share repurchase value and the number of executive share-based instruments retained at year end (X_Closing) existed prior to the start of the global financial crisis (2002–2006). Nonetheless, a substantial positive correlation was noted between share repurchase value and the number of executive share-based instruments exercised (X_Exercised) both during and after the financial crisis (2007–2009). This showed that there may have been a structural shift in the relationship between share repurchase value and executive share-based compensation: prior to the global financial crisis, the relationship was between share repurchase value and the quantity of share-based instruments held by executives; however, during and following the crisis, the relationship shifted to the number of instruments exercised.

Table 4. Regression results on repurchase value: Effect of the global financial crisis.

Independent/Control Variable	Before the Crisis (2002–2006)			During the Crisis (2007–2009)			After the Crisis (2010–2017)		
	Coef	Marg	Sig	Coef	Marg	Sig	Coef	Marg	Sig
X_Exercised	11.31	0.175		82.13	0.675	**	37.66	0.232	***
X_Closing	17.50	0.270	***	−22.08	−0.182		−10.78	−0.066	
X_TSREPS	−0.00	−0.000		−0.66	−0.005		−0.02	−0.000	
XL_Returnshare ^	−0.25	−0.004		0.15	0.001		0.03	0.000	
XL_Marketbook ^	−0.22	−0.003		−0.39	−0.003		0.11	0.001	
X_Divyield ^	0.02	0.000		0.11	0.001	**	0.05	0.000	
XL_Lmarketcap	−0.68	−0.010		−1.87	−0.015	**	−1.62	−0.010	***
X_Directshares	−1.46	−0.023		−3.59	−0.030		−2.56	−0.016	
XL_Debtassets	−3.77	−0.058	***	−1.63	−0.013		−2.44	−0.015	**
X_ROA	−0.01	−0.000		−0.00	−0.000		0.02	0.000	**
X_Cash flow	1.63	0.025	**	7.54	0.062	***	3.11	0.019	**
Constant	−8.18	n/a		−8.25	n/a		−3.28	n/a	
Company-fixed effects	Yes, Mundlak			Yes, Mundlak			Yes, Mundlak		
Year dummies	Yes			Yes			Yes		
Robust standard error clustered by company	Yes			Yes			Yes		
Number of observations	668			367			1 042		
Chi-square	544.49			61.66			142.11		
Prob > chi2	0.00			0.00			0.00		

Note. Data gathered from IRESS and annual financial statements. Marg denotes the marginal effects of the coefficient. Dependent variable: share repurchase value. Independent variables: number of share-based instruments exercised by executives (X_Exercised), number of share-based instruments held by executives at year end (X_Closing), whether vesting constraints pertain to share price, TSR and/or EPS (X_TSREPS). Control variables as per Table 1, while ^ shows winsorisation. *** $p < 0.01$, ** $p < 0.05$.

Two factors could have contributed to this breakup in the relationship: the global financial crisis of 2007–2009 and International Financial Reporting Standard 2 Share-Based Payments (IFRS 2), which went into effect on 31 December 2005. Share options were the most common share-based incentive used prior to the implementation of IFRS 2 (Steenkamp and Wesson 2018b). Increased dividends reduce the value of share options, so executives holding large numbers of unexercised share options would be more likely to execute share repurchases than they would be to boost dividends (Fenn and Liang 2001). After the implementation of IFRS 2, companies used fewer share options and more full quantum schemes (Steenkamp and Wesson 2018b). So, as share option usage declined, the relationship between higher share repurchases and executives holding share-based instruments would have started to erode.

In addition, many share options were “out of the money” during the global financial crisis and did not provide significant incentive value. This might have caused executives to focus more on the immediate value of exercised incentives than on the long-term benefits of incentives held at year end. It is possible that this emphasis on the short term has continued since the global financial crisis. The relationship between a short-term perspective, or the executive share-based compensation vesting during the year, and share repurchase value was also reported by [Edmans et al. \(2022\)](#).

5. Conclusions and Recommendations

Recent studies have investigated the relationship between share repurchases and executive share-based compensation in developed economies. In emerging economies, however, research on this topic is sparse. In South Africa, specifically, such research is crucial as the corporate governance requirements pertaining to share repurchases offer less protection to company stakeholders when compared to the requirements in developed economies. Furthermore, South Africa has extreme levels of income inequality. Self-enrichment by executives exacerbates income inequality, highlighting the relevance of this paper from a social justice perspective. To better understand whether additional regulation and disclosure regarding share repurchases and their impact on executive share-based compensation may be warranted, the purpose of this paper was to investigate the relationship between share repurchases and executive share-based compensation in South Africa.

The decision to repurchase was found to have a positive correlation with both the number of share-based instruments that were exercised and the number of instruments held at year end. There was no statistically significant correlation between share repurchase value and the quantity of share-based instruments when considering the entire period under review (2002 to 2017). Yet, when certain time periods, repurchasing companies, or repurchase types were considered, a statistically significant positive association became apparent. Share repurchase value and the number of share-based instruments held at year-end had a positive association prior to the global financial crisis of 2007–2009. A positive correlation between share repurchase value and the number of instruments exercised during the year was reported during and after the financial crisis. This change from instruments held to instruments exercised was caused by companies switching from appreciation to full quantum schemes after the implementation of IFRS 2 and the global financial crisis. Moreover, a positive correlation was found when focussing only on announced general repurchases or share repurchases conducted by subsidiaries.

Overall, this article provides support, from a South African perspective, for the existence of a positive relationship between executive share-based compensation and share repurchases. Based on the managerial power hypothesis, it is postulated that South African executives may be abusing share repurchases to improve the value realised from share-based pay and extracting camouflaged rents. This knowledge justifies increased shareholder activism regarding share repurchases.

It is recommended that the JSE enhances its regulations pertaining to share repurchases by mandating that real-time announcements of all share repurchases be made, as is required by stock exchanges in many developed economies. Stakeholders will then be able to actively monitor the relationship between share repurchases and executive share-based compensation. Furthermore, it is advised that shareholders scrutinise the share repurchases executed by executives in the previous financial term before authorising future share purchases at the annual general meeting. The disclosure of share repurchases, the justification for them, and their influence on the share price and EPS in the integrated report should be improved.

The Basic Materials and Financial industries were not included in the population; hence, the findings of this paper cannot be generalised to all companies on the JSE’s Main Board. Given that South Africa has country-specific regulations for share repurchases, the results also cannot be generalised to other countries.

When examining the exercise of share-based instruments as independent variable, this paper assumes that, in a given year, the share repurchases took place prior to the exercise of any share-based instruments. However, owing to the announcement rules governing general repurchases and the inconsistent disclosures regarding executive share-based compensation in annual financial statements, the exact timing of the share repurchases and the exercise of the share-based instruments could not be determined. Future case studies might focus on selected companies (for example, those with the highest share repurchase values) and consider the dates of the share repurchases and the exercise of share-based instruments in greater detail.

Lastly, the findings highlight the value of using regression procedures that are appropriate for the dependent variable under study. Because the rand value spent on share repurchases as a percentage of market capitalisation is naturally expressed as a percentage, the fractional regression model was an appropriate model to use. The fractional regression model could be used in future accounting and business research that use dependent variables reported as percentages.

Author Contributions: Conceptualisation, G.S., N.W. and E.v.d.M.S.; methodology, G.S., N.W. and E.v.d.M.S.; formal analysis, G.S.; writing—original draft preparation, G.S.; writing—review and editing, N.W. and E.v.d.M.S.; supervision, N.W. and E.v.d.M.S. All authors have read and agreed to the published version of the manuscript.

Funding: This research received no external funding.

Institutional Review Board Statement: The study was exempted from ethics review and clearance by the Research Ethics Committee of Stellenbosch University (project number USB-2017-1814; dated 21 November 2017), as it did not incorporate human or animal participation.

Data Availability Statement: Data can be accessed by contacting the researchers.

Conflicts of Interest: The authors declare no conflict of interest.

References

- Aboody, David, and Ron Kasznik. 2008. Executive stock-based compensation and firms' cash payout: The role of shareholders' tax-related payout preferences. *Review of Accounting Studies* 13: 216–51. [CrossRef]
- Avallone, Francesco, Alberto Quagli, and Paola Ramassa. 2014. The effects of accounting treatment and financial crisis on the stock option plans of Italian companies. *Economic and Business Review* 16: 77–95. [CrossRef]
- Banyi, Monica L., Edward A. Dyl, and Kathleen M. Kahle. 2008. Errors in estimating share repurchases. *Journal of Corporate Finance* 14: 460–74. [CrossRef]
- Bebchuk, Lucian A., Jesse M. Fried, and David I. Walker. 2002. Managerial power and rent extraction in the design of executive compensation. *The University of Chicago Law Review* 69: 751–846. [CrossRef]
- Bhargava, Alok. 2013. Executive compensation, share repurchases and investment expenditures: Econometric evidence from US firms. *Review of Quantitative Finance and Accounting* 40: 403–22. [CrossRef]
- Burns, Natasha, Brian C. McTier, and Kristina Minnick. 2015. Equity-incentive compensation and payout policy in Europe. *Journal of Corporate Finance* 30: 85–97. [CrossRef]
- Chan, Konan, David L. Ikenberry, Inmoo Lee, and Yanzhi Wang. 2010. Share repurchases as a potential tool to mislead investors. *Journal of Corporate Finance* 16: 137–58. [CrossRef]
- Cook, Douglas O., and Weiwei Zhang. 2022. CEO option incentives and corporate share repurchases. *International Review of Economics and Finance* 78: 355–76. [CrossRef]
- De Cesari, Amedeo, and Neslihan Ozkan. 2015. Executive incentives and payout policy: Empirical evidence from Europe. *Journal of Banking & Finance* 55: 70–91. [CrossRef]
- Department for Business, Energy and Industrial Strategy. 2019. Share Repurchases, Executive Pay and Investment (BEIS Research Paper Number 2019/011). Available online: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/817978/share-repurchases-executive-pay-investment.pdf (accessed on 6 March 2023).
- Edmans, Alex, Vivian W. Fang, and Allen H. Huang. 2022. The long-term consequences of short-term incentives. *Journal of Accounting Research* 60: 1007–46. [CrossRef]
- Farrell, Kathleen A., Jin Yu, and Yi Zhang. 2013. What are the characteristics of firms that engage in earnings per share management through share repurchases? *Corporate Governance: An International Review* 21: 334–50. [CrossRef]
- Fenn, George W., and Nellie Liang. 2001. Corporate payout policy and managerial stock incentives. *Journal of Financial Economics* 60: 45–72. [CrossRef]

- Gao, Xing, and Mathias Kronlund. 2020. Does Equity-Based Compensation Cause Firms to Manage Earnings per Share? (SSRN Working Paper). Available online: <https://www.ssrn.com/abstract=3073822> (accessed on 6 March 2023).
- Geiler, Philipp, and Luc Renneboog. 2016. Executive remuneration and the payout decision. *Corporate Governance: An International Review* 24: 42–63. [CrossRef]
- Goergen, Marc, and Luc Renneboog. 2011. Managerial compensation. *Journal of Corporate Finance* 17: 1068–77. [CrossRef]
- Griffin, Paul A., and Ning Zhu. 2010. Accounting rules? Stock buybacks and stock options: Additional evidence. *Journal of Contemporary Accounting & Economics* 6: 1–17. [CrossRef]
- Jan, Ahmad A., Fong-Woon Lai, and Muhammad Tahir. 2021. Developing an Islamic Corporate Governance framework to examine sustainability performance in Islamic Banks and Financial Institutions. *Journal of Cleaner Production* 315: 1–14. [CrossRef]
- Jensen, Michael C., and William H. Meckling. 1976. Theory of the firm: Managerial behavior, agency costs and ownership structure. *Journal of Financial Economics* 3: 305–60. [CrossRef]
- Jolls, Christine. 1998. Stock Repurchases and Incentive Compensation (NBER Working Paper No. 6467). Available online: <https://www.nber.org/papers/w6467.pdf> (accessed on 6 March 2023).
- JSE (Johannesburg Stock Exchange). 2017. *JSE Listing Requirements*. Johannesburg: LexisNexis.
- Kahle, Kathleen M. 2002. When a buyback isn't a buyback: Open market repurchases and employee options. *Journal of Financial Economics* 63: 235–61. [CrossRef]
- Kim, Jaemin, Ralf Schremper, and Nikhil P. Varaiya. 2005. Open market repurchase regulations: A cross-country examination. *Corporate Finance Review* 9: 29–38. [CrossRef]
- Lamba, Asjeet S., and Vivek M. Miranda. 2010. The role of executive stock options in on-market share buybacks. *International Review of Finance* 10: 339–63. [CrossRef]
- Lazonick, William. 2014. Profits without prosperity. *Harvard Business Review*, 47–55.
- Lee, Inmoo, Yuen Jung Park, and Neil D. Pearson. 2020. Repurchases after being well known as good news. *Journal of Corporate Finance* 62: 1–29. [CrossRef]
- Liu, Harrison, and Edward P. Swanson. 2016. Is price support a motive for increasing share repurchases? *Journal of Corporate Finance* 38: 77–91. [CrossRef]
- Moore, David. 2018. Managerial Self-Interest and Strategic Repurchases: Evidence from Equity Vesting Schedules (SSRN Working Paper). Available online: <https://doi.org/10.2139/ssrn.3014462> (accessed on 6 March 2023).
- Mundlak, Yair. 1978. On the pooling of time series and cross section data. *Econometrica* 46: 69–85. [CrossRef]
- Ndayisaba, Gilbert A., and Abdullahi D. Ahmed. 2021. Demystifying the paradoxical popularity of stock buybacks in a market environment characterised by high stock prices. *International Review of Financial Analysis* 78: 1–16. [CrossRef]
- Nel, Rudie. 2018. Investor tax-driven preferences for dividends and share repurchases of listed companies. *South African Journal of Accounting Research* 32: 71–87. [CrossRef]
- Nel, Rudie, and Nicolene Wesson. 2019. The timing of dividend declarations based on a forthcoming change in dividend tax regime. *South African Journal of Accounting Research* 33: 59–75. [CrossRef]
- Pepper, Alexander, and Julie Gore. 2014. The economic psychology of incentives: An international study of top managers. *Journal of World Business* 49: 350–61. [CrossRef]
- Qu, Xin, Majella Percy, Fang Hu, and Jenny Stewart. 2022. Can CEO equity-based compensation limit investment-related agency problems? *Account Finance* 62: 2579–614. [CrossRef]
- Steenkamp, Gretha, and Nicolene Wesson. 2018a. Share-based incentives for South African CEOs: Trends 2002–2015. *South African Journal of Accounting Research* 32: 46–70. [CrossRef]
- Steenkamp, Gretha, and Nicolene Wesson. 2018b. Changes in South African executive share-based remuneration. *Journal of Economic and Financial Sciences* 11: 1–12. [CrossRef]
- Steenkamp, Gretha, and Nicolene Wesson. 2020a. Post-recession share repurchase behaviour by JSE-listed companies: Transparent or not? *Journal of Accounting in Emerging Economies* 10: 465–86. [CrossRef]
- Steenkamp, Gretha, and Nicolene Wesson. 2020b. The relationship between share repurchases and share-based remuneration of South African CEOs: An exploratory study. *Management Dynamics* 29: 2–18.
- Vermeulen, Marise. 2014. Share repurchases in the South African mining sector. *South African Journal of Business Management* 45: 1–13. [CrossRef]
- Viviers, Suzette, and Nadia Mans-Kemp. 2021. Successful private investor activism in an emerging market. *Corporate Governance* 21: 92–110. [CrossRef]
- Weisbenner, Scott J. 2004. Corporate share repurchases: What role do stock options play? (University of Illinois Research Paper). Available online: <https://pdfs.semanticscholar.org/4535/14076f5e1b0863bd8e5b638bea7af7d9211c.pdf> (accessed on 6 March 2023).
- Wesson, Nicolene, Eon v. d. M. Smit, Martin Kidd, and Willie Hamman. 2018. Determinants of the choice between share repurchases and dividend payments. *Research in International Business and Finance* 45: 180–96. [CrossRef]
- Wesson, Nicolene, Wilna Bruwer, and Willie Hamman. 2015. Share repurchase and dividend payout behaviour: The South African experience. *South African Journal of Business Management* 46: 43–54. [CrossRef]
- Wooldridge, Jeffrey M. 2010. *Econometric Analysis of Cross Section and Panel Data*, 2nd ed. Cambridge: The MIT Press.

Wooldridge, Jeffrey M. 2014. *Introduction to Econometrics*. Hampshire: Cengage Learning.

Young, Steven, and Jing Yang. 2011. Stock repurchases and executive compensation contract design: The role of earnings per share performance conditions. *Accounting Review* 86: 703–33. [[CrossRef](#)]

Disclaimer/Publisher's Note: The statements, opinions and data contained in all publications are solely those of the individual author(s) and contributor(s) and not of MDPI and/or the editor(s). MDPI and/or the editor(s) disclaim responsibility for any injury to people or property resulting from any ideas, methods, instructions or products referred to in the content.