

Article

Determinants of Cash Distribution Options in South African Listed Firms: An Empirical Analysis of Earnings, Company Size, and Economic Value Added

Ntungufhadzeni Freddy Munzhelele ^{1,*} and Ayodeji Michael Obadire ² 

¹ Faculty of Management, Commerce and Law, University of Venda, Thohoyandou 0950, South Africa

² School of Finance and Professional Studies, Botswana Accountancy College, Gaborone 00319, Botswana; ayodejio@bac.ac.bw

* Correspondence: freddy.munzhelele@univen.ac.za

Abstract: The purpose of this study was to examine the determinants of cash distribution options by critically considering the effects of earnings, dividends, firm size, and economic value added. The distribution of cash dividends to shareholders serves as a basic means by which shareholders receive returns on their investments, so it is essential to examine share repurchases alongside dividends to enhance management's efforts in maximising shareholder value. This study utilised panel data from 52 companies listed on the Johannesburg Security Exchange (JSE) that engaged in open market share repurchases for at least 2 years between 2000 and 2019. The data were extracted from the IRESS database. The panel data regression model was fitted with the ordinary least squares (OLS), difference generalised moment method (Diff-GMM), system generalised moment method (Sys-GMM), and least-squares dummy variable correction estimator (LSDVC). The findings revealed that there was a positive and significant relationship between the earnings per share and the payoff flexibility, implying that there was an inherent flexibility of repurchases as a payout option in the sampled firms. Additionally, the study revealed a significant negative relationship between the firm size, economic value added, and payoff flexibility. This suggests that larger companies tend to distribute a lower proportion of their earnings as share repurchases and opt for higher cash dividends instead. The implications of these findings provide financial managers with valuable insights into the role of share repurchases as a cash distribution choice. By recognising share repurchases as a viable option, financial managers can enhance their efforts to create and maximise shareholder value, particularly in emerging market settings. This evidence should encourage financial managers to recognise share repurchases more as a distribution choice, diffusing the tension regarding share repurchases replacing the payment of cash dividends and some doubt that they may not possess attributes complimentary to cash dividends. The study recommended relevant academic, industry, and policy implications in the South African context.



Citation: Munzhelele, Ntungufhadzeni Freddy, and Ayodeji Michael Obadire. 2023. Determinants of Cash Distribution Options in South African Listed Firms: An Empirical Analysis of Earnings, Company Size, and Economic Value Added. *Risks* 11: 181. <https://doi.org/10.3390/risks1100181>

Academic Editor: Mogens Steffensen

Received: 1 August 2023

Revised: 11 September 2023

Accepted: 22 September 2023

Published: 19 October 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

The prudent management of finances and resources is a key component of financial management for businesses (Kontuš 2018). In order to accomplish the organisation's short- and long-term goals, this entails making strategic decisions on the acquisition, allocation, and utilisation of financial resources. Options for cash distribution are essential in this process because they let businesses distribute surplus money to different stakeholders. Pidun (2019) asserted that choosing the best cash distribution is crucial because it has a big impact on the business's success and financial health. For a company to be sustainable and successful, it is essential to strike a balance between retaining appropriate financial reserves, rewarding investors, and reinvesting surplus funds (Lazonick 2014). Effective

financial management and ensuring the company's long-term growth and stability depend on careful consideration of these variables.

According to [Feito-Ruiz et al. \(2020\)](#) and [Lazonick \(2014\)](#), dividends, share repurchases, and other payout mechanisms are probable choices available for a firm's cash distribution and payout policy. [Pidun \(2019\)](#) suggested that share repurchasing has become an integral part of companies' financial strategy. The recognition of share repurchases as a payout alternative places them alongside cash dividends, and together, they are a means by which wealth can be distributed to shareholders during normal corporate operations ([Benkert 2020](#)).

The flexibility inherent in share repurchases, that is the choice they provide as to how much should be paid, although relatively non-binding, enhances their recognition with respect to managers' endeavours to maximise value for shareholders ([Brav et al. 2005](#)). The utilisation of share purchases with respect to payout policy dates back several decades. For example, share repurchases have been allowed in the United States (U.S.) since the 1970s, although they only became more popular in the 1980s, and the United Kingdom (U.K.) legalised them in 1981 ([Dittmar 2008; Wesson et al. 2015](#)); they have since become a global phenomenon. Share repurchases were only permitted in South Africa beginning on 1 July 1999 ([Wesson and Botha 2019](#)). Share repurchases are now a global phenomenon, to the point where they occasionally outnumber cash dividends and new share issuance in some economies, namely the U.S. and U.K. ([Wesson et al. 2015](#)). Numerous studies such as those of [Sakinç \(2017\)](#), [Sodhi and Mateus \(2018\)](#), and [Chen and Liu \(2021\)](#) have drawn from the robustness of theories such as agency, signaling, pecking order, trade-off, and behavioural finance theory to fully understand the dynamics of cash distribution options determinants. This study was underpinned by the postulations of both agency and signaling theory.

Researchers have investigated a wide range of variables that could determine a firm's cash distribution with a lack of consensus on the motivation for dividend payments or share repurchasing as a better option. This remains unresolved despite the numerous debates among scholars ([Feito-Ruiz et al. 2020; Liu et al. 2014](#)). Popular among the variables that determine cash distribution are earnings performance, cash flows, corporate governance, tax-effects, size, and the risk attitudes of shareholders ([Faisal et al. 2020; Al-Najjar and Kilincarslan 2019](#)). Most importantly, significant research ([Sakinç 2017; Sodhi and Mateus 2018; Chen and Liu 2021](#)) on the emergence of share repurchases as a payout choice has been performed for the developed economies, but not for the emerging economies. However, the growing concern in terms of the re-purchasing of payout and its effect on the firm's cash distribution options needs immediate evaluation, especially in Africa. This study identified this gap and aimed to fill it by using extensive variables to test the determinants of cash distributions amongst South African listed firms.

The choice of South Africa as the scope for this study can be attributed to several unique characteristics that distinguish it from many other African countries. South Africa is one of the continent's most-developed and industrialised economies, with a well-established financial sector and a history of financial market regulation and corporate governance practices. It has a relatively large number of publicly listed firms compared to many other African nations ([Kaźmierska-Jóźwiak et al. 2022](#)). Additionally, South Africa has a more-advanced regulatory framework and disclosure requirements, making it possible to access comprehensive financial data for the study analysis. Furthermore, South Africa's economic and political stability, as well as its relatively mature stock exchange provide a conducive environment for studying corporate finance dynamics ([Moloi et al. 2021](#)). The country also represents a unique blend of both emerging and developed market characteristics, making it an interesting case study for understanding how factors such as earnings performance, cash flows, corporate governance, tax effects, firm size, and risk attitudes influence cash distribution decisions in a transitioning economy ([Kaźmierska-Jóźwiak et al. 2022](#)). In contrast to some other African nations, South Africa's corporate landscape has more-pronounced connections to global financial markets, multinational corporations, and international investors ([Moloi et al. 2021](#)). These factors can impact the

financing choices and cash distribution policies of South African firms in distinctive ways, warranting a focused examination of the country's context. Overall, the choice of South Africa offers a valuable opportunity to explore the dynamics of cash distributions in an emerging market with unique characteristics and a more-developed financial infrastructure.

Thus, the main aim of this study was to examine the determinants of firms' cash distribution options in the context of South African listed firms, focusing on the relationship between earnings, dividends, company size, economic value added, and payout flexibility. To accomplish this goal, the study first examined the link between earnings per share and payout flexibility. Second, the study investigated the relationship between dividend and share payout flexibility. Third, the study investigated the relationship between the company's size and payment flexibility. Finally, the study investigated the relationship between the economic value contributed and payout flexibility. In a nutshell, the research questions that this study sought to answer were as follows:

- What are the determinants of firms' cash distribution options for South African listed firms?
- Are share repurchases becoming substitutes for or complements of cash dividends?

The data for the study were derived solely from the published financial statements of South African firms listed on the main board of the Johannesburg Stock Exchange. The study's primary goal was to focus on share repurchases as a cash distribution option; thus, the study sampled listed companies that have made open market share repurchases for at least two years since the year 2000 and whose financial information is available on the IRESS database. The study's data came from the IRESS database, a well-known and trustworthy database for African listed companies.

The study contributes to the literature in several ways. The results of the study provided empirical evidence from the African perspective to ascertain the determinants of cash distribution options and if the trends mirror those of the developed markets. Furthermore, the results provide financial managers with insights into the determinants of payout options to make informed decisions regarding the acquisition, allocation, and usage of funds to operationalise their companies' short- and long-term vision.

The rest of the paper is organised as follows. Section 2 provides a brief literature review regarding the determining factors of cash distribution options and the empirical evidence. Section 3 presents the research methodology used in the study. Section 4 discusses the empirical findings, whilst Section 5 concludes.

2. Literature Review

The popular debate among scholars (Brav et al. 2005) is that share repurchases are flexible as opposed to cash dividends as managers can decide to make them or not, as well as the fact that they can be made to serve several purposes. Iyer and Rao (2017) and Wesson et al. (2018) supported this notion by arguing that repurchases are more flexible; thus, some managers prefer them over cash dividends. According to Chivaka et al. (2009), research on share repurchase has been conducted for a few reasons such as the enhancement of value, a change in shareholding and control, and administrative- and compensation-related reasons. With the focus of this current study, this section is divided into four subsections. The first two sections will cover the empirical trends and motivation for share repurchases in developed and emerging markets, respectively. The last two sections will elicit empirical evidence of the extent to which share repurchases are used as a payout choice and the determinants of the payout decision and flexibility.

2.1. Empirical Trends and Motivation for Share Repurchases in Developed Markets

The practice and trends of share repurchases in developed nations have been more noteworthy than for emerging markets (Wesson et al. 2018). In their research, Dedman et al. (2022) investigated the share price patterns of U.S. companies engaged in share repurchases. The study findings indicated that these companies tend to buy back their shares at a higher price, using this strategy as a signal of anticipated favourable future earnings.

Furthermore, a study by Abraham et al. in 2018 surveyed managers' views on share repurchases, particularly with respect to tender offer premiums. In the end, they proposed several factors that may determine the size of the tender offer premium, namely the dividend substitution hypothesis, leverage, the capital adjustment hypothesis, the price pressure hypothesis, the anti-takeover hypothesis, and the signalling hypothesis. Consistent with Dedman et al.'s (2022) work, Abraham et al. (2018) revealed that managers use share repurchases to signal their confidence in the prospects of the company. Additionally, a study by Olasiuk et al. in 2020 confirmed the signalling hypothesis as a key driver of share repurchases (Olsiuk et al. 2020). The interviewed respondents also provided additional motivational drivers, namely the best use of excess cash, boosting the share price and earnings per share.

In a trend-setting investigation, Varma et al. (2011) contributed to the debate on the drivers of share repurchases. Firstly, they confirmed information signalling as a key driver with respect to tender offers. They, however, cautioned that this phenomenon may not be generalised with respect to the open market offers, as the empirical evidence does not seem to be clear with respect to these offers. They also lent support for other drivers, namely the agency costs of free cash flow, capital reallocation, the dividend substitution hypothesis, and capital structure adjustment.

Tsetsekos et al. (2011) provided support for the signalling hypothesis as a key driver for share repurchases. They also confirmed other hypotheses, namely capital structure adjustments and the best use of excess free cash flow. Voss (2012) confirmed the somewhat less-popular driver of repurchasing, managerial incentives, thereby stressing that they are key factors that influence share repurchase decisions.

Although share repurchases were legalised in 1981 in the U.K., related activities took off in the 1990s (Wang et al. 2021). It is important to note that Rees (1996) was the first researcher to empirically show the share price impact of repurchases in the U.K. He revealed a positive reaction of share price to repurchases, on the announcement date. This evidence suggests that the U.K.'s corporate situation supports the signalling hypothesis as a reason for repurchases. Wang et al. (2021) scrutinised the effect of regulations and taxes on share repurchase activities, also in the U.K. setting. Furthermore, Wang et al. (2021) stated that the tax system in the U.K. is the key determinant of share repurchases. As such, Wang et al. (2021) found that, although applicable regulations seem to discourage open market repurchase activity with respect to undervalued shares, under-pricing is observed as a key driver of share repurchases in the U.K.

Furthermore, Alghamdi (2018) investigated the motivations for and determinants of share repurchase activity in Saudi Arabia. It was noted that companies undertake share repurchase activities to signal that share prices are undervalued. Similarly, Andriopoulos and Hoque (2013) evaluated the determinants of share repurchases of three developed European countries, namely the U.K., Germany, and France. Andriopoulos and Hoque (2013) revealed that, in all of these countries, large companies whose shares are widely held and those that pay dividends prefer announcing share repurchases through the open market option, and in the U.K., excess cash flow seems to be a key determinant of share repurchases; thirdly, the dividends and share repurchases in the U.K. and Germany seem to be complementary, but they serve as substitutes in France.

Furthermore, a study by Ota et al. was conducted in 2019 on the impact of open share repurchases in Japan (Ota et al. 2019). The research supported the signalling hypothesis, indicating that companies repurchasing shares were sending positive signals about their future performance. Additionally, they found evidence supporting the investment hypothesis, suggesting that the announcement of open market repurchases provided insights into managers' private benefits related to new investments. The Oceanian developed markets also contributed to share repurchase activity, as highlighted by Ann Wheeler and Garrick (2020) in their study on share repurchases in Australia. Ann Wheeler and Garrick (2020) recognised the differences between the applicable regulations in the U.S. and Australia and

revealed that share repurchases were allowed in Australia from 1 November 1989, but it took more than five years for effective repurchase activities to gain momentum.

Moreover, Anwar et al. (2018) discovered that enhancing earnings per share and net asset backing per share are motivations for share repurchases in India. They observed that, approximately five years after the reluctance period (that is, from 1995 onwards), Indian managers have become aware of the potential benefits and the legislative matters of repurchases. Worryingly, as Anwar et al. (2018) noted, shareholders seem not to understand or are not favourably placed to understand share repurchase events. Dedman et al. (2022) also highly recognised the signalling hypothesis as a key motive for repurchases.

2.2. Empirical Trends and Motivation for Share Repurchases in Emerging Markets

Emerging economies' contribution to share repurchase research has been noteworthy, although far less compared to that of developed economies. In South Africa, share repurchase activity and related research followed their legalisation in 1999 (Wesson et al. 2015). Through investigating share price reaction to open market repurchases, Alghamdi (2018) provided support for the signalling hypothesis, suggesting that South African managers use share repurchases to signal that shares are undervalued and that a company's prospects are promising. Chivaka et al. (2009) were the first scholars to investigate reasons for share repurchases in South Africa, in detail. Their study specifically pointed out that the vast interest and significance of repurchase activity warrant some considerable research in South Africa. They found three major reasons for share repurchases, namely enhancement of shareholder value, changes in shareholding and control, and administrative matters.

Lee et al. (2005) conducted a study on the long-term performance of share prices in response to open market repurchases in Korea. Their research provided strong support for the efficient market hypothesis, suggesting that share prices are generally accurately valued, making it unlikely for managers to buy overvalued shares or sellers to sell overvalued shares. However, this evidence did not support the dynamics of the signalling hypothesis.

On the other hand, Isa and Ghani (2011) observed that Malaysian managers use share repurchases to signal their confidence in their companies' prospects. They also noted that Malaysian managers employ share repurchases to stabilise share prices. Firth et al. (2010) focused on specific accounting ratios and deduced motivations for share repurchases. His findings showed that variables such as return on equity, return on assets, earnings per share, and the market-to-book value of equity demonstrated some improvements in the operating performance of companies engaging in share repurchases.

In contrast, Jiang et al. (2013) identified different trends in the Chinese context, where they found that share repurchases and cash dividends served as substitutes. Wang et al. (2021) assessed the real effects of share repurchases and their impact on a company's profitability in Hong Kong. Their findings supported the signalling hypothesis, which was also corroborated by Zhang (2005) and Firth et al. (2010) in the same country.

2.3. Empirical Review of Share Repurchases as a Substitute of and/or Complement to Cash Dividends

The recognition of share repurchases as a payout choice, that is as a cash distribution alternative to shareholders, and relatively alongside cash dividends suggests that share repurchases have become an effective means through which companies can maximise shareholders' wealth. The popularity and growth in repurchase activity have been attributed to their flexibility (Brav et al. 2005). Jagannathan et al. (2000) researched companies' decisions to distribute cash flows and the reasons for the choice between cash dividends and share repurchases. Firstly, they recognised the growing repurchase activities and that repurchases are more volatile than cash dividends. They then noted that repurchases are complements to dividends, not substitutes. Secondly and lastly, they interpreted their results as confirming the flexibility inherent in share repurchases. Guay and Harford (2002) gave full support for the above findings as they concluded that companies increase dividends to distribute

permanent cash flow shocks, while repurchases are for the distribution of transitory shocks and that share repurchases are flexible.

Through a survey methodology, [Brav et al. \(2005\)](#) also scrutinised, among others, the choice between dividends and repurchases, as well as the flexibility of the latter. They confirmed repurchases' flexibility, that is, repurchases help managers time the market, thereby responding to share undervaluation. Some increase in share repurchases has been occurring at the expense of a decrease in dividends. [Grullon and Michaely \(2002\)](#) examined several issues with respect to dividends and repurchases, namely the trend of repurchases and the substitution hypothesis and the motives for companies not substituting for repurchases earlier. They noted that, firstly, in the 15 years preceding their report, cash distribution to shareholders was initiated more through repurchases than cash dividends. Secondly, the rate of growth in dividends was observed as being significantly lower than before, while companies' spending on repurchases was shown to have increased since the mid-1980s. Lastly, companies finance their repurchase programmes through funds that would otherwise be used to finance cash dividends, and large and more-mature companies only use part of this financial option. In another study, [Skinner \(2008\)](#) examined the relationship between earnings, share repurchases, and cash dividends. The results revealed that companies continue to pay dividends because of their history, that is they feel obliged to do so (for a small group that pays dividends and makes repurchases). [Skinner \(2008\)](#) also observed that much of the companies' earnings are absorbed by repurchases rather than by dividends, thus explaining the substitution hypothesis, and that repurchases adjust quicker to earnings than dividends do, thus confirming the flexibility of repurchases. Furthermore, he noted that some companies have no significant history of paying dividends; hence, for these companies, paying dividends was no longer economically important (for a small group that does not pay dividends, but makes share repurchases and a large group that occasionally makes repurchases). [Bonaimé et al. \(2014\)](#) reported that a more-flexible distribution favours repurchases. [Rapp et al. \(2014\)](#) found that companies for which shareholders advocate for flexibility pay lower dividends and prefer repurchases. This is consistent with both the substitution hypothesis and the complementary nature of share repurchases. [Che-Yahya and Alyasa-Gan \(2020\)](#) found past dividends and company size to be among the key determinants of payout choices in Malaysia. [Kaźmierska-Jóźwiak et al. \(2022\)](#) noted cash dividends as the dominant payout option over share repurchases in South Africa and Poland.

2.4. Empirical Review of the Determinants of Payout Choices' Flexibility

Empirical evidence has shown several variables as having an impact on payout decisions; such variables include earnings, dividends, profitability, the level of cash holding, and the company's size. Notably, the dividend relevance models ([Moreland and Madsen 2017](#); [Harakeh et al. 2019](#); [Singh and Tandon 2019](#); [Paolone and Paolone 2020](#)) show that earnings and dividends are key determinants of payout decisions. Although these models advocate for a smoothing pattern of dividends by companies over time, a relatively positive correlation exists between earnings, dividends, including respective lagged variables, and payout decisions. That is, a higher level of earnings and dividends results in higher next dividends or more value-adding dividend decisions. Thus, a positive correlation is expected between these explanatory variables and payout flexibility.

The past decades have witnessed the emergence of value-based measures of financial performance, notably the economic value added (EVA), as key in determining value created for shareholders. These measures have been noticeable as early as the 1980s when [Marsh and Merton \(1987\)](#) argued that economic earnings are better determinants of payout decisions than accounting earnings. Consistently, through net present value (NPV) analysis, [Stewart \(2014\)](#) found, among others, that EVA has an impact on payout decisions. Thus, a relatively positive correlation is expected between EVA and payout flexibility. That is, the more value created for shareholders may result in more utilisation of share repurchases as payout choices.

The level of cash holdings has some implications for company managers. Holding large amounts of cash may be advantageous as this allows managers to respond in a value-adding manner to future or unexpected investment needs. Tong (2011) and other researchers argued that holding large amounts of cash in companies can lead to agency costs of free cash flow. This means that managers may be tempted to invest the excess cash in low-return or value-reducing projects. To address this, companies should consider their structures, such as managers' compensation plans, in a way that encourages managers to distribute excess cash as dividends. Furthermore, there is an anticipated positive correlation between the level of cash holdings and payout flexibility. In other words, when a company has more available cash, there is a higher likelihood of utilising it for share repurchases.

Furthermore, the size of the company plays a key role with respect to the company's operations. Grullon et al. (2002) and Banyi and Kahle (2014) noted that larger and more-mature companies are more likely to pay dividends. De Mortanges and Van Riel (2003) also argued that mature companies can consistently generate excess cash and, hence, pay more dividends. Thus, a positive correlation is expected between company size and payout flexibility, that is larger companies still pay out a higher fraction of their total payout as cash dividends.

According to Bonaimé et al. (2014), payout flexibility is the value of share repurchases to the total payout. This definition was adapted for this study in line with the major aim of the company's existence, which is the maximisation of value for shareholders, also shown by the adoption of EVA as one of the determining factors of payout flexibility. The global trend in repurchases is that open market repurchases have been widely used to an extent of 90% of total repurchases (Moreland and Madsen 2017; Harakeh et al. 2019). Studies from emerging nations that examine the trends and practices of share repurchases do so with respect to open market share repurchases, a phenomenon that is relatively like that of global practice.

Several studies have looked at different trends and practices related to share repurchases. Some of these studies include Bhana (2007), who examined the market reaction to open market share repurchases, Chivaka et al. (2009), who explored the reasons for share repurchases, Krige (2012), who studied the market reaction to open market share repurchases, and Punwasi (2012), who analysed the market reaction to share repurchase announcements.

Other studies such as Wesson et al. (2015) focused on actual share repurchases in South Africa and whether they follow global practices. This study acknowledged that open market share repurchases have been particularly noticeable and more common than other forms of repurchases, especially with their public announcements through the Johannesburg Stock Exchange (JSE) and Securities News Services (SENS). Additionally, Wesson et al. (2018) and Nyere and Wesson (2019) conducted studies on factors influencing payout decisions. It is worth noting that the study by Wesson et al. (2015) primarily explored the trends of actual share repurchases in South Africa, making it more of an exploratory study.

In line with the study of Wesson et al. (2015), this study acknowledged that SENS may not necessarily report all open market repurchase information since the JSE listing requirements are that if share repurchases do not exceed 3% of shares in issue in a specific year, they cannot be reported. It is nonetheless argued, in line with studies, such as those of Bhana (2007), Krige (2012) and Punwasi (2012), that the SENS announcements have more ability to prompt market reaction than repurchases that could not necessarily be made public (that is, share repurchases not reported because they do not exceed the 3% cut-off rule) and, hence, have some influence on the corporate value.

2.5. Theoretical Framework

This study was grounded on two relevant theories that explain the dynamics of determinants of cash distribution options. The underpinning theories are the agency and signalling theory. The review of these theoretical perspectives provided a solid foundation for understanding the determinants of cash distribution options in the context of South African listed firms.

On the one hand, Jensen and Meckling's (1976) agency cost theory postulates that firm managers may not always act in the best interest of the firm owners. This implies that there may be conflicts of interest between the shareholders (owners) and managers (agents) of a company. In the context of cash distribution options, it posits that managers may make choices regarding dividends or share repurchases that align with their interests rather than those of shareholders (Sakinç 2017). For example, managers may prefer to retain earnings for personal job security or to fund pet projects, while shareholders may prefer immediate cash payouts. As a result of this, this study explored how earnings, as a proxy for firm profitability, and economic value added (EVA), a measure of the firm's economic performance, influence the agency relationship in terms of cash distribution. High earnings and a positive EVA may signal to shareholders that managers are acting in their best interests, which could result in higher dividends or share repurchases (Chen and Liu 2021).

On the other hand, the signalling theory of Ross (1977) posits that the financing choices of managers are based partly on the management's perception of the market's current valuation of the stock. Thus, the managers' perception and the insider information signal the prospect of the firm to the market. Signaling theory centres on how firms use dividend policy and share repurchases to convey information to investors about their financial health and future prospects. This study explored how cash distribution options may serve as signals to convey information to the market. For instance, a firm with consistent and increasing dividends may signal stability and confidence in future earnings, attracting investors, while share repurchases could signal undervaluation and confidence in future stock price appreciation (Sodhi and Mateus 2018). The theory predicts that firm size could play a role in signaling, as larger firms may have more resources to engage in signaling through cash distributions.

3. Methodology and Data

In this section, we present the data utilised in the study, as well as the regression models that were developed to accomplish the study's aim.

3.1. Data and Variable Definition

The data used for this study were collected from 52 companies listed on the JSE for the period 2000 to 2019. This sample covers a span of 20 years, starting from the year after share repurchases were allowed in South Africa until the year before the COVID-19 pandemic, so as to examine the study's phenomenon without possible COVID-19 implications. It aimed to capture the trend of share repurchases throughout the period they have been practised in South Africa. The sample comprises companies listed on the main board of the JSE that have conducted open market share repurchases for a minimum of 2 years during the sample period. The study used the standardised audited financial statements of the 52 listed companies, which were obtained from the IRESS database. The IRESS database has been used in South Africa successfully for the past few decades, by researchers and other professionals, as a supplier of reliable financial information.

The summarised definitions of the variables are shown in Table 1. Krige (2012) and Punwasi (2012) defined payout flexibility as the value of open market share repurchases to total payout, which represents the cash distribution option. This definition will be adopted for this study. Following the above discussion, the study used earnings per share (EPS), dividends per share (DPS), company size (SIZE), and economic value added (EVA) as the main determinants of payoff flexibility. These are popular measures adopted by previous scholars such as Moreland and Madsen (2017), Harakeh et al. (2019), Singh and Tandon (2019), and Paolone and Paolone (2020).

Table 1 contains the definition of the variable used in the study. The table captures all the main predictor variables and how they were measured. The variables included the payoff flexibility (PF), earnings per share (EPS), dividends per share (DPS), firm size (SIZE), and economic value added (EVA).

Table 1. Summarised definitions of variables.

S/N	Variables	Abbreviation	Variable Measurement
Dependent Variables			
1	Payoff Flexibility	PF	The value of share repurchases to total payout as a measure of cash distribution option.
Independent Variables			
2	Earnings Per Share	EPS	Earnings attributable to the ordinary shareholder as the ratio of the weighted average number of shares.
3	Dividends Per Share	DPS	Ordinary dividends declared/paid as the ratio of the weighted average number of shares
4	Firm Size	SIZE	Natural log of total assets.
5	Economic Value Added	EVA	NOPAT – (CE × WACC), where NOPAT is net operating profit after tax, CE is capital employed, and WACC is the weighted average cost of capital

Source: Authors' compilation (2022).

3.2. Regression Model Specification

The study utilised panel data analysis to explore determinants of cash distribution options for South African listed firms over a 20-year period, which spans from 2000 to 2019. In line with established practices outlined in the studies by [Amidu and Abor \(2006\)](#), [Sarwar et al. \(2018\)](#), [Tahir et al. \(2020\)](#), as well as [Moloi et al. \(2021\)](#), the study adopted the generic panel model specification as established.

$$Y_{i,t} = \alpha_i + \beta X_{i,t} + \varepsilon_{it} \quad (1)$$

where i denotes cross-sectional and t represents time-series measurements, $Y_{i,t}$ is a dependent variable, $X_{i,t}$ represents sets of independent variables, α_i is a constant term, and ε_{it} is the error term.

Following Model (1), the specified regression model for this study is:

$$\begin{aligned} PF_{ijt} = & \beta_0 + \beta_1 PF_{ijt-1} + \beta_2 EPS_{ijt} + \beta_3 EPS_{ijt-1} + \beta_4 DPS_{ijt} + \\ & \beta_5 DPS_{ijt-1} + \beta_6 SIZE_{ijt} + \beta_7 EVA_{ijt} + \beta_8 EVA_{ijt-1} + \varepsilon_{it} \end{aligned} \quad (2)$$

where PF_{ijt-1} represents the lagged dependent variables capturing the firm, country, and time dimensions, while β_{1-8} represents the coefficient of the variables and ε_{ijt} represents the error term. The model equation aimed at testing whether the cash distribution option, which is measured by the payoff flexibility (PF), is affected by the EPS, DPS, SIZE, and EVA. To fully understand the abbreviations and acronyms used in the model equation, see Table 1.

Furthermore, we included the lagged variables in the regression model above in order to capture and measure the impact of past values of the independent variables (EPS, DPS, and EVA) on the current value of the dependent variable (PF).

3.3. Choice of Model Estimation Procedures

By employing an appropriate model specification, predictor variables can effectively account for a significant portion of the variations observed in the data pool. However, inherent and unnoticed heterogeneities still contribute to the error term. An effective approach to mitigating and managing these heterogeneities depends on the chosen method for modelling the dataset ([Malik and Rafique 2013](#)).

For this research, the panel data method was adopted. According to [Melese \(2015\)](#) and [Shumet \(2016\)](#), the panel data methodology involves pooling observations across different subjects over a specific period, resulting in repeated measurements of each variable over time. This approach combines cross-sectional and time-series data, leading to an increased

amount of data, greater degrees of freedom, and reduced collinearity among the explanatory variables, which enhances the econometric estimation's efficiency. Moreover, it enables the examination of various econometric issues that cannot be accurately studied using only a longitudinal or time series methodology.

The primary advantage of the panel data methodology lies in its ability to improve estimation efficiency and broaden the scope of the conclusions. It offers more informative insights than pure time series or cross-sectional data analysis, making it well-suited for detecting the dynamics of change. Additionally, it allows for the utilisation of diverse suitable estimators, which can be categorised under static and dynamic data estimators. The study adopted the dynamic panel data approach over its counterparts for its robustness and ability to include lagged dependent variables as additional explanatory variables in the regression model and its robustness in handling the dynamics and inconsistency of the timeline in a dataset.

According to [Francis and Osborne \(2012\)](#) and [Lee and Hsieh \(2013\)](#), several estimators can be adopted in the dynamic panel data model, which include the ordinary least squares (OLS), the differenced generalised methods of the moment (Diff GMM) of [Arellano and Bond \(1991\)](#), the system generalised methods of the moment (Sys GMM) of [Blundell and Bond \(1998\)](#), and the least-squares dummy variable correction (LSDVC) proposed by [Bruno \(2005\)](#). Numerous studies such as [Andres et al. \(2009\)](#), [Munzhelele et al. \(2021, 2022\)](#), and [Obadire et al. \(2022a\)](#) successfully adopted this combination of dynamic panel estimators. The Diff-GMM is essential for estimating dynamic panel data models, particularly when endogeneity is a concern, as it transforms the data to eliminate fixed effects and offer robust parameter estimation using moment conditions. Furthermore, the Sys-GMM extends the Diff-GMM by efficiently handling instrument proliferation issues, making it valuable for models with numerous instruments. It uses lagged levels as instruments for differenced equations to enhance efficiency. LSDVC is crucial for addressing fixed effects in dynamic panel data models by introducing entity-specific dummy variables and within-group transformations, ensuring unbiased estimates in settings where fixed effects significantly impact the relationships under study. These methods collectively enable the researcher to analyse the complex panel datasets, control for endogeneity and fixed effects, and yield reliable results ([Obadire et al. 2022a](#), [Francis and Osborne \(2012\)](#), and [Lee and Hsieh \(2013\)](#)). Based on the relevance, suitability, and dynamism of the data, the study adopted the four mentioned estimators to fit the panel data regression model.

The model is not without its limitations; the major drawbacks of the dynamic panel data model are fraught with autocorrelations, sample selectivity biases, and heterogeneity among the individual variables ([Francis and Osborne 2012](#); [Flannery and Hankins 2013](#); [Moyo 2016](#); [Obadire et al. 2022b](#)). To cater to the limitations in the adoption of dynamic panel data estimators, the researchers conducted various tests to verify the presence or absence of multicollinearity, heteroskedasticity, and cross-sectional independence. The variance inflation factor (VIF) test of multicollinearity, the Lagrange multiplier (LM) test of serial correlation, the white noise test of heteroskedasticity, and Jarque–Bera (JB) test of the normal distribution were conducted.

Thus, based on the nature of the study and the research instrument, the OLS, Diff GMM, Sys GMM, and LSDVC estimation techniques were adopted to fit the dynamic panel data represented in Model Equation (1) and were implemented in the STATA 15 econometric software. STATA 15 was deemed suitable for the analysis of the panel data because it allows for the use of various model estimators as compared to other econometric software.

4. Empirical Results and Discussion of Findings

Dynamic panel data and the econometric methodology using STATA 15 were used to perform the data analysis in this study. This study used an unbalanced panel across the variables tested over the period of observation. Descriptive statistics and the normality test of the data used are shown in Table 2.

4.1. Descriptive and Diagnostic Statistics

This section presents the descriptive statistics and the diagnostic test results of the variables used in the study.

Table 2 presents the summary statistics for the dependent and independent panel data variables. The panel data variables were constructed from the data drawn from the annual financial statements, which were obtained from the IRESS database. To eliminate outlier observations and the most-extremely misreported data, all variables were winsorised to the 99th percentile. The cash distribution option was measured by the value of the payoff flexibility (PF), which is the dependent variable. The independent variables in the Table are defined as follows: EPS denotes earnings per share; L_EPS denotes the lagged earnings per share; DPS denotes dividends per share; L_DPS denotes the lagged dividends per share; SIZE denotes the firm size; EVA denotes the economic value added; L_EVA denotes the lagged economic value added.

Table 2. Summary statistics and normality test results of the variables.

Variables	No. of Obs.	Mean	Std Dev.	Min	Max	Skewness	Kurtosis
PF	902	0.1084	0.3080	0.000	1.000	2.4970	7.2552
EPS	781	193.46	217.50	4.50	669.00	1.1793	3.0574
L_EPS	791	184.99	210.44	5.00	650.10	1.2077	3.1292
DPS	771	73.94	93.43	0.00	272.00	1.1113	2.7738
L_DPS	767	69.19	87.94	0.00	255.00	1.1190	2.7756
SIZE	775	14.63	1.63	12.10	16.96	-0.2105	1.7031
EVA	570	189,970.4	323,578.5	229,068.7	826,982	0.7974	2.4764
L_EVA	535	194,387.7	308,827.3	-179,972.1	810,187.5	0.8677	2.5036

Source: Authors' compilation (2022).

The descriptive statistics result represented in Table 2 above depicts that, on average, all sampled firms had a payout flexibility of 10.84%. On the one hand, this implies that, on average, the share repurchase of any of the firms in the sample of this study comprised only 10.84% of the total payout, which is a relatively smaller fraction compared to cash dividends. This is in line with the argument of Skinner (2008), who alluded to the fact that companies prefer to pay cash dividends because of their history and somehow feel obliged to continue doing so. Furthermore, Anwar et al. (2018) argued that shareholders seem not to understand the benefit and use of share repurchase and, thus, consistently favour cash dividends. On the other hand, the related minimum and maximum values of the payout flexibility were 0.0000 and 1.000, respectively, with 30.80 as the standard deviation. This indicates a relatively small dispersion among the sample companies. The minimum PF of 0.0000 represents some periods where share repurchases were not made, and the maximum PF of 1.000 is an indication that there are periods where open market share repurchases were made without corresponding cash dividends paid. In certain instances, share repurchases were combined with minimal cash dividends, leading to a payout flexibility of 1 or nearly 1.

Among all the variables, EVA had the fewest observations, totalling 563, mainly due to missing values in the reported financial statements, resulting in 527 observations for the lagged EVA. The average earnings per share (EPS) was 193.46 with a standard deviation of 217.50, while the average dividends per share (DPS) was 73.94 with an SD of 93.43. The average size of the companies, measured by the natural logarithm of total assets (SIZE), was 14.63, ranging from 12.10 to 16.96. This indicates that the sample comprises companies of relatively similar sizes, which is supported by the small SD of 1.63 for SIZE.

Upon examining trends in share repurchase announcements, it became apparent that not all the announced repurchases were executed. This suggests an inherent flexibility in

the practice of share repurchases. This finding aligns with previous studies conducted by [Wesson et al. \(2018\)](#), [Brav et al. \(2005\)](#), [Iyer and Rao \(2017\)](#), and [Bonaimé et al. \(2014\)](#).

Furthermore, the results of the skewness normality test indicate that all variables had approximately symmetric distributions, as evidenced by their skewness coefficients being close to zero. Additionally, the data exhibited a moderate positive skewness pattern, with skewness coefficients approaching one. This suggests that the variables were asymmetrically distributed with a longer right tail, where the mean, median, and mode did not occur at a regular frequency or the same point ([Obadire et al. 2022b](#)).

Furthermore, the kurtosis coefficients observed for most variables in the dataset were less than or equal to 3. This characteristic suggests that there was no significant positive surplus kurtosis present, and the data followed a light-tailed distribution, which is commonly referred to as a platykurtic distribution. In a platykurtic distribution, the data have fewer extreme values and are more spread out compared to a normal distribution. The kurtosis value of 3 indicates a normal distribution, and when the kurtosis is less than 3, it indicates a flatter and less-peaked distribution. This implies that the dataset did not exhibit unusually heavy tails, extreme values, or a pronounced outlier, making it less prone to extreme events and less likely to deviate significantly from the mean ([Sigauke 2014](#)).

This study conducted several diagnostic tests such as the Lagrange multiplier test, white noise test, Jarque–Bera test, and multicollinearity test to ascertain the goodness of fit and reliability of the model. The Lagrange multiplier test was used to detect and address serial correlation, which assesses whether there is correlation between error terms in a time series model ([Malik and Rafique 2013](#)). This test helps ensure the independence of the error terms in the model. The white noise test was applied to examine conditional heteroscedasticity, which evaluates whether the error terms exhibit varying levels of variability over time ([Hill and Motegi 2019](#)). This test helps ensure that the model's error terms have a constant variance.

The Jarque–Bera test was utilised to evaluate the normality of the model's residuals. Normality is an important assumption in statistical analyses, and this test helps determine whether the distribution of the residuals resembles a normal distribution ([Olweny and Omondi 2011](#)). Additionally, a multicollinearity test was conducted to check for the presence of multicollinearity among the predictor variables. Multicollinearity refers to a high correlation between predictor variables in a regression model, which can lead to unreliable coefficient estimates ([Sigauke 2014](#)). The test calculated the variance inflation factors (VIF) for each variable to ensure that multicollinearity was not present in the model. By performing these tests, the study ensured that the model's assumptions were met and that the results were valid and robust.

The diagnostic test results are reported in Tables 3 and 4 below.

Table 3 presents the results of Lagrange multiplier, white noise, and Jarque–Bera test statistics. The probability column was compared with the 0.05 significance level for the test inferences to be drawn.

Table 3. Diagnostic analysis.

Test	Inference	T-Statistic	Probability
Lagrange multiplier (LM)	No serial correlation	19.34266	0.6726
White noise (Ch-sq.)	No conditional heteroscedasticity	14.12131	0.1898
Jarque–Bera (JB)	There is a normal distribution	4.568121	0.6576

Source: Authors' compilation (2022).

The results in Table 3 present the diagnostic analysis test outcomes. First, the Lagrange multiplier (LM) test was conducted to check if there was a serial correlation under the assumption of no serial correlation, which is the null hypothesis. The computed probability of 0.6726 was found to be greater than a 0.05 significance level. This means that the null hypothesis of no serial correlation was not rejected, showing that there was no serial

correlation. Subsequently, the white noise (Chi-squared) test was used to check if there was conditional heteroscedasticity under the null hypothesis. The computed probability of 0.1898 was greater than the 0.05 level of significance; hence, the null hypothesis of no conditional heteroscedasticity was not rejected. Furthermore, the Jarque–Bera (JB) test was used to test if the series was normally distributed. The computed probability of 0.6576 was greater than the 0.05 level of significance, and the null hypothesis of the series was normally distributed and was not rejected. As such, the results showed that the series used did not suffer from serial correlation, had no conditional heteroscedasticity, and was normally distributed.

Table 4 presents the results of the multicollinearity test for the dynamic regression model. The test was performed by calculating the variance inflation factors for the variables in Model Equation (1). The variable definition follows the same as presented in Table 2.

Table 4. Multicollinearity test results.

Variables	PF	
	VIF	1/VIF
EPS	12.02	0.0831
L_EPS	3.66	0.6026
DPS	11.57	0.0864
L_DPS	2.43	0.7014
SIZE	1.31	0.7644
EVA	1.24	0.8072
L_EVA	10.21	0.0979
Mean VIF	6.06	

Source: Authors' compilation (2022).

The multicollinearity test results reported in Table 4 showed that there was the presence of a high level of multicollinearity among the EPS, DPS, and L_EVA independent variables with values greater than 10. It is essential to handle the multicollinearity among the independent variables to maintain the reliability of the regression model's coefficient estimates; hence, the EPS, DPS, and L_EVA independent variables were removed from the regression model.

4.2. Regression Results

This study conducted several relevant tests to ascertain the appropriate variables needed to fit the regression model. The independent variables identified to have high multicollinearity were eliminated before conducting the regression analysis.

Table 5 shows the regression results of the payout flexibility determinants. The model was fitted using the OLS, Diff-GMM, Sys-GMM and LSDVC estimators. The cash distribution option was measured by the value of the payoff flexibility (PF). All the coefficients were estimated at the 99% confidence level. L_EPS denotes the lagged earnings per share; L_DPS denotes the lagged dividends per share; SIZE denotes the firm size; EVA denotes the economic value added. The T-statistics are presented in parentheses. The markings ***, **, and * indicate the significance levels at 1, 5, and 10%, respectively.

The regression results in Table 5 show that the lagged earnings per share positively impacted the cash distribution options of the sampled firms. The impact was statistically significant across the three estimators used to fit the regression model. The results showed that, for every increase in one unit of the lagged EPS, the sampled firms' payout flexibility increased by 0.0074, 0.0111, and 0.0261, respectively, across the estimators. This implies that, though the results were statistically significant, it can only be inferred that the L_EPS fairly impacted the payoff flexibility with relatively low regression coefficients. This suggests that the earnings were not the key determinants of company flexibility regarding payout choices. The positive relationship between the L_EPS and PF aligns with the principles of the signaling theory in the context of corporate finance. As the signaling theory suggests,

firms use their financial and operational decisions to convey information to the market and investors. In this case, the sampled South African firms' earnings per share (L_EPS) was positively related to their payoff flexibility (PF), which implies that more-profitable firms are utilising share repurchases as a payout option. This is a significant finding because it suggests that, when firms have strong and consistent earnings, they choose to use share repurchases as a way to distribute excess cash. This can be seen as a signal to the South African market that the company is confident in its financial position and future prospects. Share repurchases often indicate that a firm believes its stock is undervalued and that returning capital to shareholders through buybacks is a prudent use of funds. The consistency of this relationship with prior studies such as [Jagannathan et al. \(2000\)](#) and [Faisal et al. \(2020\)](#) further supports the idea that profitable firms are more inclined to use share repurchases as a signaling mechanism. It communicates to investors that the firm is financially healthy and that management believes in its long-term profitability. However, the findings contradict the argument made by [Denis and Osobov \(2008\)](#), who suggested that more-profitable firms with a greater proportion of earnings are more likely to pay dividends instead of opting for share repurchases. This inconsistency might be attributed to varying firm-specific factors, industry dynamics, or market conditions, highlighting the nuanced nature of signaling in corporate finance decisions.

Table 5. Regression output for the determinants of payout flexibility.

Variables	OLS	Diff GMM	Sys GMM	LSDVC
L_PF	—	(0.91) 1.8014 ***	(2.15) 6.0212 ***	(1.37) 0.7912 **
L_EPS	(−0.31) −0.0045	(2.02) 0.0074 **	(2.70) 0.0111 ***	(2.32) 0.0261 **
L_DPS	(−0.92) −0.0003	(0.09) 0.0046	(4.25) 0.0085	(2.40) 0.0099
SIZE	(−0.90) −0.0894	(−1.70) −0.1037 *	(−1.98) −0.9524 **	(−3.18) −0.2934 ***
EVA	(−2.22) −1.0708	(−1.68) −1.0807 *	(−1.97) −9.3208 ***	(−2.45) −1.1507 **
Obs.	430	435	502	492

Source: Authors' compilation (2022).

Moreover, the L_DPS had a positive relationship with the payoff flexibility, which is consistent with the findings of [Fama and Babiak \(1968\)](#) and [Andres et al. \(2009\)](#), whose previous research was with respect to current dividends as determinants of payout decisions. However, in our case, this positive relationship was statistically insignificant, as reported in Table 5.

Furthermore, the results in Table 5 showed that firm size negatively impacted the payout flexibility of the sampled firms. The results were statistically significant across the three estimators used to fit the regression model. This implies that larger companies pay out a lower fraction of payout as repurchases and, thus, evidence of the attitude of the managers of these companies being relatively different from that of the smaller ones. From a signaling theory perspective, the negative relationship between firm size and payout flexibility suggests that larger companies may use their dividend policies as a signaling mechanism to convey information to the market and investors. Larger South African companies tend to have more resources and, as a result, may be less reliant on share repurchases to distribute excess cash. Instead, they may choose to pay out a larger portion of earnings as dividends, signaling stability and financial strength. This aligns with the findings of [Kaźmierska-Jóźwiak et al. \(2022\)](#), which suggest that share repurchases complement cash dividends. In this context, larger firms may use dividends to signal their reliability and commitment to shareholders.

Furthermore, from the agency theory perspective, the results may reflect the agency conflicts between managers and shareholders. Larger South African firms often have more diversified ownership structures and may face challenges related to agency costs. Managers of larger South African firms may opt for dividend payments as a way to distribute profits and align their interests with those of shareholders, reducing agency conflicts. Share repurchases, on the other hand, could be seen as a way for managers to manipulate stock prices or divert value away from shareholders, potentially exacerbating agency problems. Therefore, the negative relationship between firm size and share repurchases may indicate a preference for dividend payments to mitigate agency issues in larger companies. Thus, the findings suggest that firm size plays a significant role in shaping payout flexibility and that share repurchases often have a complementary role to cash dividends, which can be understood through the lenses of both signaling theory and agency theory. Larger firms may use dividends to signal stability and address agency concerns, while share repurchases are seen as an additional tool for managing payout flexibility. Similarly, previous studies by [Che-Yahya and Alyasa-Gan \(2020\)](#) and [Faisal et al. \(2020\)](#) indicated that larger companies are more likely to distribute higher dividends because larger companies have more-profitable opportunities in engaging in new investments, which defeats the purpose of the companies retaining excess earnings for foreseeable investments. This is consistent with the findings of [Andriopoulos and Hoque \(2013\)](#), who investigated the determinants of share repurchases in Europe. They found that firm size consistently had a significant impact on share repurchase announcements in all three countries under study.

Furthermore, the results in Table 5 showed that the economic value added was negatively related to the payout flexibility of the sampled firms. The results were statistically significant across the three estimators used to fit the regression model. This implies that, in the process of decision-making, choices must be made as to whether repurchases can be made or not and if they are considered economically value-adding to the firm and investors. This negative relationship also suggests that the value created may not be a key determinant of the choice between cash dividends or share repurchases in a firm. The findings regarding the negative relationship between economic value added (EVA) and payout flexibility in the sampled firms align with the principles of agency theory. In agency theory, one of the central issues is the conflict of interest between shareholders (the principals) and managers (the agents). Managers may make decisions that serve their interests rather than maximising shareholder wealth. In this context, the negative relationship observed suggests that, when firms have a higher EVA, they may not necessarily opt for share repurchases as a way to distribute excess cash. The reasoning here could be that managers, acting as agents, are motivated to retain earnings when the firm is generating substantial economic value added. They may perceive these retained earnings as opportunities for future investments that could enhance their performance metrics, job security, or compensation. This aligns with the argument made by [Opler et al. \(1999\)](#), who emphasised that having excess cash does not automatically lead to share repurchases. Managers may be reluctant to repurchase shares when they see opportunities for value-creating investments within the firm. Therefore, the negative relationship between the EVA and payout flexibility suggests that managers may prioritise internal investments over cash distribution options such as share repurchases when the firm is generating substantial economic value. This behaviour could be attributed to the agency conflict, where managers' incentives and motivations diverge from those of shareholders, leading to decisions that may not necessarily align with shareholder wealth maximisation.

The combined findings from our empirical analysis indicate that share repurchases in the sampled companies have both a complementary role to and a substitute role for cash dividends. This unique pattern observed in the South African setting differs from previous studies, which often reported a prevalence of one over the other. For instance, [Hackethal and Zdantchouk \(2006\)](#) and [Jiang et al. \(2013\)](#) found evidence of substitution, while [Jagannathan et al. \(2000\)](#), as well as [Benkert \(2020\)](#) identified a complementary relationship.

5. Conclusions, Implications, and Suggestions for Future Research

The study examined the determinants of firms' cash distribution options in the context of South African listed firms, focusing on the relationship between earnings, dividends, company size, economic value added, and payout flexibility. The study used the OLS, Diff-GMM, Sys-GMM, and LSDVC estimators to fit the regression model. The study noted the inherent flexibility of share repurchases for South African listed firms indicating that share repurchases' announcements were not always acted upon eventually. The study findings showed a positive and significant relationship between the earnings per share and payoff flexibility, implying that there was an inherent flexibility of repurchases as a payout option in the sampled firms. The study also showed a positive relationship between dividends per share and the payoff flexibility that was statistically insignificant. Moreover, the study findings showed a negative relationship between firm size, economic value added, and payoff flexibility. This is because larger companies pay out a lower fraction of the payout as repurchases and are more likely to distribute higher dividends because larger companies have more-profitable opportunities in engaging in new investments, which defeats the purpose of the companies retaining excess earnings for foreseeable investments. This shows that the attitude of managers of larger companies is different from that of smaller ones regarding payout choices between cash dividends and share repurchases. This phenomenon may not be surprising given the features' differences between these groups of companies, particularly with respect to stability and growth prospects. Another important thing to note is that the study pointed to evidence of share repurchases serving both substitute and complementary roles to cash dividends based on the dual relationship between the variables tested.

The research has some important academic, industry, and policy implications, as it adds the voice of Africa to the repurchase debate literature and fills the gap in examining the determinant of payoff flexibility in South Africa. Firstly, the findings of this study contribute significantly to the academic literature on corporate finance, particularly in the context of cash distribution options in South African firms. The identification of both the complementary and substitute roles played by share repurchases and dividends provides valuable insights for researchers. This study encourages further research in emerging markets such as South Africa, shedding light on the nuanced nature of cash distribution decisions. Academics can explore similar patterns in other emerging economies, deepening our understanding of corporate finance dynamics. Moreover, the positive relationship between lagged earnings per share (L_EPS) and payout flexibility aligns with signaling theory. Researchers can delve deeper into how profitable firms strategically use share repurchases as a signaling mechanism. This opens avenues for studies exploring the signaling effects of share repurchases in different contexts. The negative relationship between economic value added (EVA) and payout flexibility offers insights into agency conflicts. Future research can investigate how managerial incentives and shareholder interests influence payout decisions when firms generate a substantial EVA.

Secondly, these findings have practical implications for firms, especially in South Africa, where cash distribution decisions play a crucial role in financial management. For strategic payout choices, South African firms should recognise that share repurchases serve both as a complementary and substitute options for cash dividends. Financial managers should strategically assess their earnings, size, and economic value added when deciding on payout options. For managerial attitudes, larger firms should be aware that their payout choices signal different attitudes compared to smaller firms. Management in larger companies might need to communicate their financial strategies effectively to shareholders to avoid misconceptions related to payout preferences. Furthermore, firms with substantial economic value added should carefully weigh the benefits of internal investments versus external payouts. This balance can help align managerial incentives with shareholder interests.

Lastly, policymakers in South Africa can consider these findings when formulating regulations related to corporate finance and cash distribution. Regulators should recognise the

dual role of share repurchases in South African firms. Regulatory frameworks can provide flexibility for firms to make payout choices that align with their unique circumstances. Furthermore, this encourages transparency in communication between firms and shareholders, which can help clarify the reasons behind payout decisions. This transparency can foster investor confidence and reduce information asymmetry. In sum, the study recommends that financial managers should recognise share repurchases more as a distribution choice, which diffuses the tension regarding share repurchases replacing the payment of cash dividends and some doubt that they may not possess complimentary attributes to the same, thus enhancing the decision alternatives for financial managers in their endeavours to create and maximise value for shareholders, particularly in an emerging market setting.

Despite the valuable insights provided by this study, certain limitations should be acknowledged. Firstly, the research was constrained by a relatively small sample size as it focused exclusively on listed firms in South Africa that have engaged in open market share repurchases for at least two years since 2000. This limitation may restrict the generalizability of the findings to unlisted companies or firms in other regions. Additionally, the study primarily considered determinants that are popular among the sampled firms as factors influencing payout flexibilities. While these determinants provide valuable insights, future research should explore a broader range of cash distribution option determinants and redefine the concept of payoff flexibility. By doing so, a larger and more-diverse sample could be obtained, leading to more-robust and -widely applicable results. It is recommended that future studies expand the scope and definition of payoff flexibility, allowing for a more-comprehensive understanding of this concept. Such research endeavours could lead to a more-enriched context for further exploration of emerging markets. By combining the findings of future studies with the insights gained from this research, a more-holistic understanding of cash distribution options and their determinants in an emerging market can be achieved.

Author Contributions: Conceptualisation, N.F.M.; methodology, A.M.O.; software, A.M.O.; validation, A.M.O.; formal analysis, N.F.M. and A.M.O.; investigation, N.F.M.; resources, N.F.M.; data curation, N.F.M.; writing—original draft preparation, N.F.M.; writing—review and editing, A.M.O.; visualisation, A.M.O.; supervision, N.F.M.; project administration, A.M.O. All authors have read and agreed to the published version of the manuscript.

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

Data Availability Statement: The data that support the findings of this study are available on the IRESS database which was accessed through the University of Pretoria library. The datasets can be accessed at www.ress.co.za (accessed on 5 February 2021).

Conflicts of Interest: The authors have declared no financial or personal relationships that may have inappropriately influenced the writing of this article; hence, no conflict of interest exist.

References

- Abraham, Rebecca, Judith Harris, and Joel Auerbach. 2018. Determinants and Consequences of Share Repurchase Decisions. *Modern Economy* 9: 966–79. [[CrossRef](#)]
- Alghamdi, Salim A. 2018. An Empirical Investigation into Motivations for and Determinants of Share Repurchases Activity: The Case of Saudi Arabia. *Arab Journal of Administrative Sciences* 25: 73–91. [[CrossRef](#)]
- Al-Najjar, Basil, and Erhan Kilincarslan. 2019. What do we know about the dividend puzzle?—A literature survey. *International Journal of Managerial Finance* 15: 205–35. [[CrossRef](#)]
- Amidu, Mohammed, and Joshua Abor. 2006. Determinants of dividend payout ratios in Ghana. *The Journal of Risk Finance* 7: 136–45. [[CrossRef](#)]
- Andres, Christian, André Betzer, Marc Goergen, and Luc Renneboog. 2009. Dividend policy of German firms: A panel data analysis of partial adjustment models. *Journal of Empirical Finance* 16: 175–87. [[CrossRef](#)]
- Andriopoulos, Dimitris, and Hafiz Hoque. 2013. The determinants of share repurchases in Europe. *International Review of Financial Analysis* 27: 65–76. [[CrossRef](#)]
- Ann Wheeler, Sarah, and Dustin E. Garrick. 2020. A tale of two water markets in Australia: Lessons for understanding participation in formal water markets. *Oxford Review of Economic Policy* 36: 132–53. [[CrossRef](#)]

- Anwar, Sadaf, Shveta Singh, and P. K. Jain. 2018. Managements' View on Shares Repurchase: An Indian Survey. *IUP Journal of Applied Finance* 24: 44–66.
- Arellano, Manuel, and Stephen Bond. 1991. Some tests of specification for panel data: Monte Carlo evidence and an application to employment equations. *The Review of Economic Studies* 58: 277–97. [CrossRef]
- Banyi, Monica L., and Kathleen M. Kahle. 2014. Declining propensity to pay? A re-examination of the lifecycle theory. *Journal of Corporate Finance* 27: 345–66. [CrossRef]
- Benkert, Can-Luca. 2020. Ownership Concentration and Agency Theory: Investigating the Effect of Large Shareholders on Corporate Payout Policy in Danish Publicly Listed Companies. Available online: <http://essay.utwente.nl/85284/> (accessed on 5 April 2021).
- Bhana, N. 2007. The market reaction to open market share repurchases announcements: The South African experience. *Investment Analysts Journal* 36: 25–36. [CrossRef]
- Blundell, Richard, and Stephen Bond. 1998. Initial conditions and moment restrictions in dynamic panel data models. *Journal of Econometrics* 87: 115–43. [CrossRef]
- Bonaimé, Alice Adams, Kristine Watson Hankins, and Jarrad Harford. 2014. Financial flexibility, risk management, and payout choice. *The Review of Financial Studies* 27: 1074–101. [CrossRef]
- Brav, Alon, John R. Graham, Campbell R. Harvey, and Roni Michaely. 2005. Payout policy in the 21st century. *Journal of Financial Economics* 77: 483–527. [CrossRef]
- Bruno, Giovanni. 2005. Approximating the bias of the LSDV estimator for dynamic unbalanced panel data models. *Economics Letters* 87: 361–66. [CrossRef]
- Chen, Ni-Yun, and Chi-Chun Liu. 2021. The effect of repurchase regulations on actual share reacquisitions and cost of debt. *The North American Journal of Economics and Finance* 55: 44–53. [CrossRef]
- Che-Yahya, Norliza, and Siti Sarah Alyasa-Gan. 2020. Explaining Dividend Payout: Evidence from Malaysia's Blue-Chip Companies. *The Journal of Asian Finance, Economics and Business* 7: 783–93. [CrossRef]
- Chivaka, Richard, Andrew Siddle, Lyndie Bayne, Carol Cairney, and Jeanne Shev. 2009. Reasons for share repurchases in South Africa: Theory versus practice. *South African Journal of Accounting Research* 23: 1–30. [CrossRef]
- De Mortanges, Charles Pahud, and Allard Van Riel. 2003. Brand equity and shareholder value. *European Management Journal* 21: 521–27. [CrossRef]
- Dedman, Elisabeth, Shan Hua, and Thanamas Kungwal. 2022. Why do UK firms repurchase their own shares? *International Journal of Banking, Accounting and Finance* 13: 177–216. [CrossRef]
- Denis, David J., and Igor Osobov. 2008. Why do firms pay dividends? International evidence on the determinants of dividend policy. *Journal of Financial Economics* 89: 62–82. [CrossRef]
- Dittmar, Amy. 2008. Corporate cash policy and how to manage it with stock repurchases. *Journal of Applied Corporate Finance* 20: 22–34. [CrossRef]
- Faisal, Faisal, M. Shabri Abd Majid, and A. Sakir. 2020. Agency conflicts, firm value, and monitoring mechanisms: An empirical evidence from Indonesia. *Cogent Economics and Finance* 8: 1–24. [CrossRef]
- Fama, Eugene F., and Harvey Babaiak. 1968. Dividend policy: An empirical analysis. *Journal of the American Statistical Association* 63: 1132–61. [CrossRef]
- Feito-Ruiz, Isabel, Luc Renneboog, and Cara Vansteenkiste. 2020. Elective stock and scrip dividends. *Journal of Corporate Finance* 64: 1–47. [CrossRef]
- Firth, Michael, Tak Yan Leung, and Oliver M. Rui. 2010. Double signals or single signal? An investigation of insider trading around share repurchases. *Journal of International Financial Markets, Institutions and Money* 20: 376–88. [CrossRef]
- Flannery, Mark J., and Kristine Watson Hankins. 2013. Estimating dynamic panel models in corporate finance. *Journal of Corporate Finance* 19: 1–19. [CrossRef]
- Francis, William B., and Matthew Osborne. 2012. Capital requirements and bank behavior in the UK: Are there lessons for international capital standards? *Journal of Banking & Finance* 36: 803–16.
- Grullon, Gustavo, and Roni Michaely. 2002. Dividends, share repurchases, and the substitution hypothesis. *The Journal of Finance* 57: 1649–84. [CrossRef]
- Grullon, Gustavo, Roni Michaely, and Bhaskaran Swaminathan. 2002. Are dividend changes a sign of firm maturity? *The Journal of Business* 75: 387–424. [CrossRef]
- Guay, Wayne, and Jarrad Harford. 2002. The cash-flow permanence and information content of dividend increases versus repurchases. *Journal of Financial Economics* 57: 385–415. [CrossRef]
- Hackethal, Andreas, and Alexandre Zdantchouk. 2006. Signaling power of open market share repurchases in Germany. *Financial Markets and Portfolio Management* 20: 123–51. [CrossRef]
- Harakeh, Mostafa, Edward Lee, and Martin Walker. 2019. The effect of information shocks on dividend payout and dividend value relevance. *International Review of Financial Analysis* 61: 82–96. [CrossRef]
- Hill, Jonathan B., and Kajji Motegi. 2019. Testing the white noise hypothesis of stock returns. *Economic Modelling* 76: 231–42. [CrossRef]
- Isa, Mansor, and Zaidi Ghani. 2011. Market reaction to actual share repurchase in Malaysia. *Asian Journal of Business and Accounting* 4: 27–46.
- Iyer, Subramanian Rama, and Ramesh P. Rao. 2017. Share repurchases and the flexibility hypothesis. *Journal of Financial Research* 40: 287–313. [CrossRef]

- Jagannathan, Murali, Clifford P. Stephens, and Michael S. Weisbach. 2000. Financial flexibility and the choice between dividends and stock repurchases. *Journal of Financial Economics* 57: 355–84. [[CrossRef](#)]
- Jensen, Michael C., and William H. Meckling. 1976. Theory of the firm: Managerial behavior, agency costs and ownership structure. *Corporate Governance* 3: 305–60.
- Jiang, Zhan, Kenneth A. Kim, Erik Lie, and Sean Yang. 2013. Share repurchases, catering, and dividend substitution. *Journal of Corporate Finance* 21: 36–50. [[CrossRef](#)]
- Kaźmierska-Jóźwiak, Bogna, Nicolene Wesson, and Gretha Steenkamp. 2022. Share repurchases versus dividends: A comparison between Poland and South Africa. *Ekonoma Międzynarodowa*, 72–89. [[CrossRef](#)]
- Kontuš, Eleonora. 2018. Financing Management of Companies. In *Governing Business Systems: Theories and Challenges for Systems Thinking in Practice*. Berlin: Springer International Publishing, pp. 1–23.
- Krige, J. D. 2012. Market reaction to open market share repurchases on the Johannesburg stock exchange over the period 2000 to 2007. *Studies in Economics and Econometrics* 36: 101–22.
- Lazonick, William. 2014. Profits without prosperity. *Harvard Business Review* 92: 46–55.
- Lee, Chien-Chiang, and Meng-Fen Hsieh. 2013. The impact of bank capital on profitability and risk in Asian banking. *Journal of International Money and Finance* 32: 251–81. [[CrossRef](#)]
- Lee, Yong-Gyo, Sung-Chang Jung, and John H. Thornton Jr. 2005. Long-term stock performance after open-market repurchases in Korea. *Global Finance Journal* 16: 191–209. [[CrossRef](#)]
- Liu, Jen-Chang, Jr-Jung Chiou, and Chau-Chen Yang. 2014. Payout policy in Taiwan: Cash dividends, stock repurchases and capital reduction. *Review of Securities and Futures Markets* 26: 47–96. [[CrossRef](#)]
- Malik, Muhammad Farhan, and Amir Rafique. 2013. Commercial Banks Liquidity in Pakistan: Firm Specific and Macroeconomic Factors. *Romanian Economic Journal* 16: 141–54.
- Marsh, Terry A., and Robert C. Merton. 1987. Dividend behavior for the aggregate stock market. *Journal of Business* 60: 1–40. [[CrossRef](#)]
- Melese, Nigist. 2015. Determinants of Banks Liquidity: Empirical Evidence on Ethiopian Commercial Banks. Master's thesis, Addis Ababa University, Addis Ababa, Ethiopia. Unpublished.
- Moloi, T., T. Nharo, and M. Hlobo. 2021. The relationship between board characteristics and dividend payment policies: The JSE Top 40 listed companies cases. *Journal of Academic Finance* 12: 30–52. [[CrossRef](#)]
- Moreland, Scott, and Elizabeth Leahy Madsen. 2017. Demographic dividend models. *SpringerLink* 24: 453–67.
- Moyo, Vusani. 2016. Dynamic capital structure adjustment: Which estimator yields consistent and efficient estimates? *Journal of Economic and Financial Sciences* 9: 209–27. [[CrossRef](#)]
- Munzhelele, Freddy, Hendrik Wolmarans, and John Hall. 2022. The dividend relevance pay-out model in the context of an emerging economy. *Acta Commercii* 22: 1–14. [[CrossRef](#)]
- Munzhelele, Ntungufhadzeni Freddy, Hendrik Petrus Wolmarans, and John Henry Hall. 2021. Corporate life cycle and dividend payout: A panel data analysis of companies in an emerging market. *Journal of Economic and Financial Sciences* 14: 1–9.
- Nyere, Lovemore, and Nicolene Wesson. 2019. Factors influencing dividend payout decisions: Evidence from South Africa. *South African Journal of Business Management* 50: 1–16. [[CrossRef](#)]
- Obadire, Ayodeji Michael, Vusani Moyo, and Ntungufhadzeni Freddy Munzhelele. 2022a. The determinant of African banks' capital structure: Basel III Accord or bank-specific factors? *Journal of Economic and Financial Sciences* 15: 1–14. [[CrossRef](#)]
- Obadire, Ayodeji Michael, Vusani Moyo, and Ntungufhadzeni Freddy Munzhelele. 2022b. Basel III capital regulations and bank efficiency: Evidence from selected African Countries. *International Journal of Financial Studies* 10: 57. [[CrossRef](#)]
- Olasiuk, Hanna Petrivna, Siddhartha Bhasker, and Sudip Patra. 2020. Cash dividends and share repurchases in Ukrainian pharmaceutical companies. *Global Business Review* 10: 24–33. [[CrossRef](#)]
- Olweny, Tobias, and Kennedy Omundi. 2011. The effect of macro-economic factors on stock return volatility in the Nairobi stock exchange, Kenya. *Economics and Finance Review* 1: 34–48.
- Opler, Tim, Lee Pinkowitz, René Stulz, and Rohan Williamson. 1999. The determinants and implications of corporate cash holdings. *Journal of Financial Economics* 52: 3–46. [[CrossRef](#)]
- Ota, Koji, Hironori Kawase, and David Lau. 2019. Does reputation matter? Evidence from share repurchases. *Journal of Corporate Finance* 58: 287–306. [[CrossRef](#)]
- Paolone, Francesco, and Francesco Paolone. 2020. The Value Relevance of Accounting Information and Cash Flows: A Review of Prior Studies and Models. *Accounting, Cash Flow and Value Relevance* 12: 37–52.
- Pidun, Unim. 2019. *Corporate Financial Strategy*. Berlin: Springer Link, vol. 21, pp. 229–52.
- Punwasi, Kiran. 2012. An Event Study: The Market Reactions to Share Repurchase Announcements on the JSE. Master's dissertation, University of Pretoria, Pretoria, South Africa.
- Rapp, Marc Steffen, Thomas Schmid, and Daniel Urban. 2014. The value of financial flexibility and corporate financial policy. *Journal of Corporate Finance* 29: 288–302. [[CrossRef](#)]
- Rees, William. 1996. The impact of open market equity repurchases on UK equity prices. *The European Journal of Finance* 2: 353–70. [[CrossRef](#)]
- Ross, Stephen A. 1977. The determination of financial structure: The incentive-signalling approach. *The Bell Journal of Economics* 8: 23–40. [[CrossRef](#)]

- Sakinç, Mustafa Erdem. 2017. Share Repurchases in Europe a Value Extraction Analysis. Available online: <https://core.ac.uk/download/pdf/144862921.pdf> (accessed on 6 April 2021).
- Sarwar, Bushra, Ming Xiao, Muhammad Husnain, and Rehana Naheed. 2018. Board financial expertise and dividend-paying behavior of firms: New insights from the emerging equity markets of China and Pakistan. *Management Decision* 56: 1839–68. [CrossRef]
- Shumet, Mekbib. 2016. Determinants of Liquidity in Banks of Ethiopia: The Case of Selected Private Banks. Ph.D. thesis, Addis Ababa University, Addis Ababa, Ethiopia.
- Sigauke, Caston. 2014. Modelling Electricity Demand in South Africa. Ph.D. thesis, University of the Free State, Free State, South Africa.
- Singh, Narinder Pal, and Aakarsh Tandon. 2019. The effect of dividend policy on stock price: Evidence from the Indian market. *Asia-Pacific Journal of Management Research and Innovation* 15: 7–15. [CrossRef]
- Skinner, Douglas J. 2008. The evolving relation between earnings, dividends, and stock repurchases. *Journal of Financial Economics* 87: 582–609. [CrossRef]
- Sodhi, Adi, and Cesario Mateus. 2018. Share Repurchases, Institutional Framework and Globalisation: A UK-Specific. Available online: <https://www.researchgate.net/profile/Cesario-rchases-Institutional-Framework-and-Globalisation> (accessed on 5 April 2020).
- Stewart, Bennett. 2014. What determines TSR. *Journal of Applied Corporate Finance* 26: 47–55. [CrossRef]
- Tahir, Hussain, Mahfuzur Rahman, and Ridzuan Masri. 2020. Do board traits influence firms' dividend payout policy? Evidence from Malaysia. *Journal of Asian Finance, Economics and Business* 7: 87–99. [CrossRef]
- Tong, Zhenxu. 2011. Firm diversification and the value of corporate cash holdings. *Journal of Corporate Finance* 17: 741–58. [CrossRef]
- Tsetsekos, George P., Daniel J. Kaufman Jr., and Lawrence J. Gitman. 2011. A survey of stock repurchase motivations and practices of major US corporations. *Journal of Applied Business Research (JABR)* 7: 15–21. [CrossRef]
- Varma, Urvashi, Harjit Singh, and Alka Munjal. 2011. Corporate restructuring through Share buybacks: An Indian experience. *Australasian Accounting, Business and Finance Journal* 12: 117–33. [CrossRef]
- Voss, Jordan. 2012. Why do Firms Repurchase Stock? *Major Themes in Economics* 14: 55–75.
- Wang, Zigan, Qie Ellie Yin, and Luping Yu. 2021. Real effects of share repurchases legalization on corporate behaviors. *Journal of Financial Economics* 140: 197–219. [CrossRef]
- Wesson, Nicolene, and Merwe J. Botha. 2019. The effect of share repurchases on corporate investment policies: The South African experience. *Acta Commercii* 19: 1–11. [CrossRef]
- Wesson, Nicolene, B. W. Bruwer, and Willie D. Hamman. 2015. Share repurchase and dividend payout behaviour: The South African experience. *South African Journal of Business Management* 46: 43–54. [CrossRef]
- Wesson, Nicolene, EvdM Smit, Martin Kidd, and W. D. Hamman. 2018. Determinants of the choice between share repurchases and dividend payments. *Research in International Business and Finance* 45: 180–96. [CrossRef]
- Zhang, Hua. 2005. Share price performance following actual share repurchases. *Journal of Banking and Finance* 29: 1887–901. [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.