THE RELATIONSHIP BETWEEN DIVIDEND POLICY AND AGENCY COSTS OF NON-FINANCIAL LISTED FIRMS ON THE JOHANNESBURG STOCK EXCHANGE (JSE)

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ABSTRACT

This study aimed to investigate the relationship between dividend policy and agency costs of non-financial firms listed on the Johannesburg Stock Exchange (JSE). The study was conducted using the dividend policy and agency theory framework. Data for the study was collected from Bloomberg and IRESS databases. The statistical software E-views was used for detailed analysis. The study used panel data for 67 JSE-listed companies for the period 2011 to 2022. The results showed that dividend payment has a negative relationship with asset turnover ratio, implying a positive relationship with agency costs. On the other hand, the management expense ratio as a proxy for agency costs showed that dividend payment can help reduce agency costs, consistent with the agency theory. The results further revealed that financial leverage can reduce agency costs. However, it could not be considered a significant factor in the reduction of agency costs because it is not statistically significant. Nonetheless, it can still play a role in helping resolve agency disputes among managers and shareholders. The results confirmed that there are agency problems among JSE-listed firms even though they are paying dividends.

Keywords: Dividend Policy; Agency Theory; Agency Problems; Dividend-Agency Theory

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CHAPTER 1

INTRODUCTION

1.1 BACKGROUND OF THE STUDY

The rapid emergence and growth of listed companies over the past few decades have created a more complex relationship between management and owners of the company. The concept of agency theory aims to address this issue by establishing a framework that enables the owners to manage their wealth and the company efficiently (Hall, 1998). According to Hall (1998), if the goals of management are different from those of the owners, then an agency problem will arise. Cohen and Uliana (1990) identified various issues that can affect the efficiency of an organisation's operations, such as excessive levels of management compensation and the failure of the company to establish a sustainable dividend policy. These issues also lead to the creation of an agency problem.

Agency problems brought about by the separation of ownership and control include: diversion of corporate assets by insiders to themselves through theft; diluting outside investors by issuing shares to insiders; paying themselves excessive salaries; and selling assets to themselves or other corporations they can control for a profit (Shleifer & Vishny, 1997). Insiders may also use corporate assets to pursue investment strategies that give them personal benefits without benefiting outside investors (Baumol, 1959; Jensen, 1986).

Over the years, the topic of dividend payments has been a central issue in scholarly discussions. Finance literature frequently distinguishes between three main contradictory theories of dividend policies. The first theory is the dividend irrelevance theory, which suggest that a company's dividend payout is not relevant to its valuation (Miller & Modigliani (MM), 1961). This theory is also known as the dividend irrelevance theory. The second is the "bird-in-the-hand" theory, which suggests that increasing the dividend would increase the share value of the company. Lastly, the

tax preference theory, suggests that low dividends increase share value of the company. The last two theories are also known as dividend relevant theories.

The agency theory was developed by Berle and Means (1932) and other noteworthy figures such as Jensen and Meckling (1976). Dividend payment has been found to be an efficient mechanism to address agency problems. According to Tijjani and Bello (2019), shareholders will advocate for dividend payments when the company has free cash flow in order to monitor the managers' activities. Additionally, it was found that the independent board of directors can also be an effective tool for managing agency problems if it can prevent top executives, like chief executive officers, from engaging in devious behaviour (Tijjani & Bello, 2019). One other way to improve the efficiency of an agency is by rewarding its executive managers with bonuses (Boshkoska, 2015). This can be done by determining executive managers' bonuses as a proportion of the company's realised earnings.

Besides salaries, the other factors that affect an agency's performance include the corporate governance structure of the firm, the legal framework, and the conflict of interests between agents and the principals (Bhomoyi, 2019). An internal audit is a vital part of any company's governance strategy to ensure that its operations are conducted efficiently and effectively. It can help identify and halt the inefficient practices of the company, and it can protect the company's assets and capital (Bhomoyi, 2019). Cai *et al*., (2015), noted that having an audit committee can help improve the manager’s efficiency.

Dividend-agency theory developed by three economists, Rozeff (1982), Easterbrook (1984), and Jensen (1986), states that cash dividends can help resolve corporate agency problems. Empirical studies were conducted to investigate the issue of agency problems in South Africa and were reported by Hall (1998) and Piketty (2014). The studies revealed that although the JSE-listed companies continuously pay dividends, they still experience agency problems. Another study by Lambrechts (1992) revealed that agency problems do exist in most companies listed on the JSE. The existence of both agency problems and dividend payments on the JSE-listed companies warrants further investigation. The goal of this study is, therefore, to analyse the relationship between the dividend policy and agency costs of non-financial JSE-listed firms.

1.2 PROBLEM STATEMENT

The fast emergence and growth of listed companies over the past decades have created a complex relationship between owners and management. This problem can be resolved by solving the agency theory problem, (Bhomoyi, 2019). Agency problems arise when management's goals differ from those of the owners. Easterbrook (1984) suggests that dividends payment is a tool that can help solve agency problems. However, prior research conducted on the JSE-listed companies discovered that many companies in South Africa have agency problems and yet pay dividends (Lambrechts, 1992; Hall, 1998; Piketty, 2014; Bhomoyi 2019).

Bhomoyi (2019) revealed that institutional ownership helps resolve information asymmetry issues and reduces the need for dividends. This prior literature reveals contradicting results on dividend policy and agency problems in that the agency theory of dividends claims that dividend payments help solve agency problems. These studies also focused on dividend policy and agency problems individually. This motivated the current study to look at the relationship between dividend policy and agency problems of all JSE-listed companies. The study seeks to determine the extent to which dividend-agency relationship help resolves the agency problems of JSE-listed companies. Additionally, the literature revealed a gap, in that only three studies of this kind has been carried out in South Africa (Bhomoyi, 2019; Bernhardt, 2020 and Whitey, 2009). The study will also look at the combined effects of dividend payment and financial leverage on agency costs. This adds to the existing literature as no study has been conducted in South Africa covering this aspect.

1.3 RESEARCH QUESTIONS

The following main research question will guide this study:

- What is the relationship between dividend policy and agency costs of listed firms on the JSE?

Furthermore, the study investigates:

- What role does financial leverage play in influencing agency costs on the JSE?
- What is the combined effect of financial leverage and dividend policy on agency costs?

1.4 OBJECTIVES OF THE STUDY

The primary objective of this study is to determine the relationship between dividend policy and agency costs of listed firms on the Johannesburg Securities Exchange (JSE).

1.4.1 Secondary objective

The secondary objectives of the study are as follows:

- To examine the role financial leverage play in influencing agency costs on the JSE
- To examine the combined effect of financial leverage and dividend policy on agency costs

1.4.2 Hypotheses of the study

H_0^1: There is no significant relationship between agency costs and dividend policy of listed firms on the JSE.
H_1^1: There is a significant relationship between agency costs and dividend policy of listed firms on the JSE.

H_0^2: Financial leverage does not have an influence on agency costs.
H_1^2: Financial leverage has an influence on agency costs.

H_0^3: Financial leverage and dividend policy together do not have an effect on agency costs
H_1^3: Financial leverage and dividend policy together have an effect on agency costs

1.5 SIGNIFICANCE OF THE STUDY

The goal of this study is to add value to the existing literature by examining the relationship between dividend policy and agency problems of all JSE-listed companies and further examine the combined effects of dividend payment and financial leverage on agency costs. It aims to provide a deeper understanding of the factors that influence the continuous payment of dividends by JSE companies while still having agency problems and the role that dividend policy plays in attempting

to resolve agency problems. In a recent study on the topic, the relationship between dividend policy and agency problems for all financial services listed on the JSE was the main focus. In the same study, suggestions were made to investigate the same topics in other sectors of the JSE-listed companies in order to identify trends developing across sectors (Bhomoyi, 2019). This study sought to look at the dividend-agency relationship of all JSE-listed companies. Dividend policy and agency problems proxies will be used to answer the research questions.

1.6 CHAPTER SUMMARY

The chapter covered the background of the study. The research questions and study objectives were stated to help focus the study. The hypothesis of the study, problem statement and significance of the study were also covered in this chapter. The next chapter discusses the theories and empirical evidence on dividend policy and agency costs.

CHAPTER 2

LITERATURE REVIEW

2.1 INTRODUCTION

The aim of this chapter is to review the literature on dividend policy and agency problems as well as the relationship between the two. The first section discusses agency theory and/or agency problems, dividend policy and the link between agency problems and dividend policy. The second and last sections focus on the empirical studies on the dividend-agency relationship from developed and developing countries.

2.2 THEORETICAL FRAMEWORK

This section discusses the agency theory, dividend theory and the link between dividend policy and agency costs.

2.2.1 Agency Theory

The concept of agency theory by Meckling and Jensen (1976) is a central part of the study, and it states that the separation of ownership from control leads to conflicts of interests within the firm and costs that are ultimately paid by the shareholders. Agency theory assumes that the principal-agent relationship entails a transfer of trust and responsibility to the agent while also presuming that the agent is opportunistic and will pursue their own interests. This may include unethical behaviour, which creates agency conflicts. Such conflicts are frequently referred to as agency problems and they lead to significant agency costs (Davis *et al*., 1997).

The agency theory states that dividends provide incentives to managers to reduce costs relative to the principal agent relationship (Jensen, 1986). According to Jensen (1986), dividends might reduce the chances of managers investing the cash in projects that benefit them instead of stockholders. Agency theory also states that dividends can help manage the agency costs by decreasing free cash flows. This can force managers to secure extra financing from the capital

market and thus subjects insiders to outside scrutiny (Jensen, 1986; Hamdan, 2018). Agency theory aims to control the various challenges that arise when the separation of ownership and control of companies occurs. It proposes various forms of ownership structure that can be used to mitigate these agency problems (Bhomoyi, 2019). According to Eng and Mak (2003), the concept of ownership structure refers to a mechanism that enables managers and shareholders to align their interests. There are various types of ownership structure, such as institutional, insider, foreign, and management ownership (Bhomoyi, 2019).

Another important factor in addressing agency problems is the quality of investor protection. This is because, as a proxy for lower costs, the protection of investors can be very important in corporate finance (La Porta et al., 2000). Corporate law and other laws grant shareholders and other outside investors' specific rights to defend their investments from insiders' expropriation. In the case of shareholders, these rights include the ability to sue the firm for damages and the right to receive dividends per share equal to those paid to insiders (La Porta *et al.*, 2000). Another key strategy used by shareholders to cut agency costs is reducing the free cash flow that management has. Dividends can be used to accomplish this (Belden et al., 2005).

2.2.2 Dividend Policy

The debate over the concept of dividend policy occurs between the two opposing schools of thought: the dividend irrelevance and the dividend relevance theory (Bhomoyi, 2019). The irrelevance theory was pioneered by Miller and Modigliani (1961, p. 414) and their argument states that dividends are irrelevant under perfect capital markets free from transaction costs, taxes, and other market imperfections. They contend that the investor does not differentiate between dividend payments and capital gains. They also argue that dividend payouts cannot be used to value stocks or determine the company's value. Instead, a company's worth is completely based on the earning potential of its assets and its investment strategy, not on how its revenues are divided for shareholders (Modigliani & Miller, 1961, p. 414). According to Modigliani and Miller (1961), investors can reinvest the surplus cash flow of a company into its stock if the dividend is more than they expected. On the other hand, if the dividend is too small, investors can sell a part of their stock and use the earnings to replicate the same cash flow that they would have received if the

dividend had been what he expected. Due to their ability to generate their own cash flows, investors in both scenarios are unaffected by the company's dividend policy (Ani, 2014).

The empirical literature by Miller and Scholes (1978), Black and Scholes (1974) and Miller (1986) supported the argument that the dividend is irrelevant. Similarly, evidence shows companies such as Google and Apple only started to pay dividends during the early 2010s (Ciaccia, 2012). This is a concrete example from the industry of how paying dividends has little-to-no relation to increasing a company's value.

For some researchers, the content of dividends is important. For instance, Miller and Rock (1985) developed a model that explains how the dividend announcement affects the market and the shareholders due to the information asymmetry between managers and owners. The latter then gets the necessary piece of information to estimate the firm's earnings in the future. Dividends play a significant role in the market's performance. They provide investors with the necessary information to establish the company's current earnings and make informed decisions regarding the future earnings of the company. An alternate signaling model is created by John and Williams (1985) in which the source of dividend information is liquidity driven.

There are additional elements that affect a company's dividend policy. For instance, some research contends that dividend policy has a significant impact on the capital structure and agency costs of the company. Numerous studies have offered justifications for connecting agency costs with a firm's other financial operations since Jensen and Meckling (1976). According to Easterbrook (1984), businesses distribute dividends to cut down on their agency costs. Dividend payout keeps firms in the capital market, where monitoring of managers is available at a lower cost. According to Jensen (1986), if a company has free cash flow, it is better to distribute these funds to its shareholders as dividends. This method can help minimise the risk that these funds will be wasted on projects that are not profitable.

Despite the widely held belief that dividends are irrelevant, companies continue to pay them (Lintner, 1956, p. 98). Dividend puzzle, which a theory that suggests that a company's dividend payouts do not significantly affect its share price or market value, has been used to identify the

theoretical assumptions that underlie the decisions of companies to pay dividends. Through empirical evidence, financial economists have identified various factors that contribute to the continuous payment of dividends and these include the signaling theory, the tax preference theory, the clientele effect theory, and the agency cost theory (Bhomoyi, 2019). These will be discussed next.

2.2.3 Signaling Theory

There are various theories that explain why companies pay dividends. For instance, the signaling theory states that paying dividends helps companies signal a positive trend in the stock market. Due to information asymmetry and agency problems, corporate managers can gain access to vital information that the market cannot provide. A positive signal can be sent to investors by paying dividends, which can help address information asymmetry and agency problems. This is a technique that managers use to demonstrate their financial health to investors. According to the Jenson's (1986) agency theory, the availability of cash flows that exceed the required amount can cause agency problems. If the cash flows exceed the Net Present Value (NPV) projects' funding requirements, managers may be compelled to allocate their discretion on earnings (Trinh et al., 2022).

2.2.4 Tax Preference Theory

The 'no tax' assumption theory was put forth by Brennan (1970) and Litzenberger and Ramaswamy (1979), who demonstrate that dividends are important for firm value after personal tax is taken into account. This hypothesis demonstrates that there is a tax clientele explanation for dividend payments, where investors are separated into distinct groups depending on the tax rates they encounter and that they have varied preferences for dividend policy. The explanation of the tax clientele is supported by a variety of empirical research. A number of studies, including those by Elton and Gruber (1970), Pettit (1977), Scholz (1992), and Graham and Kumar (2006), demonstrate that individual investors' preferences for dividends are dependent on their tax brackets. So, depending on the clienteles they aim to serve, firms might adopt various dividend policies. While Grinstein and Michaely (2005) and Floyd et al. (2015) present empirical evidence that contradicts the dividend-tax theory, Desai and Jin (2011) and Hanlon and Hoopes (2014) provide more evidence that firms take tax into account when determining their dividend policy.

Baker and Wurgler (2004) present the catering theory of dividends, another clientele-based dividend theory. Their research demonstrates that when investors increase the stock price of dividend-paying stocks, managers pay dividends. To put it another way, managers adjust their dividend policies to suit the preferences of investors. Denis and Osobov's (2008) empirical study, though, could not discover evidence to back up this theory.

2.3 THE LINK BETWEEN DIVIDEND POLICY AND AGENCY COSTS

In a world where agency problems exist between corporate insiders and outsiders, dividends can serve as a useful tool to improve the relationship between management and shareholders. According to the agency theory, dividend payment can help align managers' interests with those of shareholders through remuneration. The theory states that the payment of dividends gives managers incentives to reduce costs in line with the principal-agent relationship (Ross, 1973; Jensen and Meckling, 1976). Dividend payment by corporate executives make it clear that they have no intention of using the earnings for personal use. La Porta et al., (2000) noted that dividend payment are better than retained income because the latter may never materialize as future dividends.

According to Schooley and Barney (1994), the payment of dividends can compel companies to increase their use of the capital market in order to obtain more money, provided it still wants to move forward with its planned investment. This encourages outside scrutiny of the company by prospective investors and other interested parties, which minimises agency problems and agency costs.

1.4 EMPIRICAL EVIDENCE

2.4.1 Dividend-Agency Relationship from Developed Countries

Dividends payment is one of the tools managers have to control agency behavior (Manos, 2002). In his study of Indian companies, Manos (2002) concluded that dividends lower agency problems

and costs because they encourage external monitoring. Similar to this, Easterbrook (1984) argues that the greatest way to reduce agency problems is to increase dividend payout.

According to studies conducted in Tunisia, dividends play a crucial role in controlling the power of top management and removing justifications for agency problems (Faccio, Larry, & Young, 2001). The agency literature indicates that outside directors can play a vital role in resolving conflicts between shareholders and management, and also help prevent disputes from arising. The agency literature further suggests that additional mechanisms, such as management equity shareholders, dividend payments, and debt leverage, also play a significant role in mitigating agency conflicts in organisations (Bathala & Rao, 1995). According to Hussain and Akbar (2022), dividend payouts can discourage managers from taking advantage of their earnings management strategies. On the other hand, Jensen and Meckling (1976) state that the presence of dividends can influence the conflicts between big and minority shareholders as well as between insiders and outsiders.

One of the most effective ways to resolve agency problems is through the law. In addition to giving shareholders the right to vote on major corporate matters, the law also provides them with various other powers, such as the ability to sue the company for damages if they are wrongfully treated (La Porta et al., 2000). The legal protection of outside investors varies significantly across different countries. This is because different laws in different countries have different content and enforcement standards. Some countries, such as the UK and the US, provide effective protection to minority shareholders (La Porta et al., 2008).

Non-value-maximizing investment choices are the main factors that contribute to agency problems. La Porta et al., (2008) note that countries with common laws tend to provide better protection to minority shareholders. On the other hand, countries with civil-law standards tend to provide weaker protection to minority shareholders. Companies distribute higher dividends in countries with the best protection (common law) than in those with inadequate protection (civil law) (Bhomoyi, 2019).

The quality of investor protection has been shown to be a vital factor in the development of corporate finance. For instance, when it comes to corporate ownership, countries with better

protection are more likely to have better capital markets. Also, it has been shown that good investor protection can help improve the efficiency of the resource allocation process and economic growth generally (La Porta et al., 2000).

Baker and Powell (1999) investigated the issue of dividend policy in Thailand and found that the results of their study were inconsistent due to the varying effects of different countries' regulations and cultures. Chay and Suh (2009) note that the different cultures, and rules and regulations in different countries can affect the dividend policy. Due to the varying effects of different cultures and regulations on the dividend policy in different countries, the conclusions of prior studies cannot be applied universally throughout developing markets, making this study an addition to the existing literature (Afshan et al., 2011).

There are various factors that affect a company's dividend payout ratio and these include the company's free cash flow, growth rate, business risk, and profitability. Although studies in emerging markets have shown that implementing a dividend policy can reduce agency costs and improve the company's profitability, only a few research studies have been conducted on the subject matter in South Africa (Bhomoyi, 2019).

2.4.2 Dividend-Agency Relationship from Developing Countries

Since the early 1980s, studies have been carried out on dividend policy in South Africa (Firer & Maytham, 2008). However, none of those studies specifically addressed the dividend-agency relationship on JSE-listed companies, nor did they examine the degree to which this relationship succeeds in maximising shareholders' wealth and, thus, elevates the value of the company (Bhomoyi, 2019).

Only two studies have been conducted to gather information on the various aspects of the dividend policy of South African companies (Bhomoyi, 2019). Seneque and Gourley (1983) conducted a survey of 145 JSE-listed companies and discovered that management at the time actively pursued a dividend policy and firmly agreed that consistency of payments and steady payout ratios were of

utmost importance. The arguments supporting the applicability of a dividend policy were strengthened by these findings.

Most of the time, when it comes to setting a dividend policy, financial directors are influenced by the earnings and the prospects of the future. According to Marx (2001), the majority of the time, the reason for a change in dividend policy should be communicated to the investors. These findings were made in the context of information asymmetry, where investors place more reliance on dividend announcements and less on financial statements because the latter are thought to be erroneous and management is suspected of manipulating financial data. Studies using information gathered at a time of relatively strong inflation discovered that many companies paid dividends that were higher than their underlying earnings (Bhomoyi, 2019).

The studies revealed that maintaining a steady dividend policy is very important for companies to maintain their profitability. Studies conducted on 33 JSE industrial companies between 1968 and 1982, showed that dividend policy did not significantly explain variations in shareholder wealth from year to year (Gevers & Hamman, 1988; Botha, Bosch & Van Zyl, 1987; Du Plessis, Archer & Affleck-Graves, 1986).

2.5 CHAPTER SUMMARY

This chapter essentially clarified the study by providing definitions for important terms including agency cost, dividend policy, and agency theory. Agency theories were also covered in this chapter to give better understanding of the relationship between dividend policy and agency costs. Dividend-agency relationship from developed countries, scaling down to the developing countries was also discussed in this chapter. The next chapter lays the methodological framework employed in this study

CHAPTER 3

METHODOLOGY, DATA AND VARIABLES

3. INTRODUCTION

This chapter aims to provide an empirical framework for the study's methodology and research design. The first section focuses on the data collection and sampling, while the second section discusses the measures of variables and their descriptions. The study utilised econometric models to attain strong results. This is followed by the panel data analysis section, which covers the fixed effects, random effects and the General Method of Moments (GMM) models. The last sections cover various tests of specifications for the panel data. These include a multicollinearity test and unit root test.

3.1 DATA COLLECTION AND SAMPLING

Data was collected from the Bloomberg database and IRESS was used to supplement missing data. Data collected from Bloomberg included: institutional ownership; assets turnover ratio; average earnings before interest and tax; average executive total compensation; dividend payout ratio; dividend yield; free cash flow; firm size; financial leverage; and return on equity. Director ownership and foreign ownership data was collected from IRESS.

Annual data of the companies was obtained from 2011 to 2022. The period was chosen due to data availability for that period for all the variables of the study. In addition, the previous researchers only conducted their studies for a shorter amount of time, which could have resulted in mixed results (Owusu et al., 2021). All JSE-listed firms for the period of study made up the population, which resulted in 350 companies. Despite the abundance of literature on the topic of dividend policy in general, the majority of studies do not include regulated firms in their investigations. This is because regulators directly or indirectly determine how much a company can pay in dividends. Additionally, regulatory bodies help equity investors cut agency costs (Saxena, 1999). Therefore, financial firms and regulated utilities were excluded from the population in accordance with the

existing literature on dividend policy, resulting in a sample size of 82 companies. Similarly, non-dividend paying firms and firms that paid dividends for two years or below were excluded from the sample because the main focus of the study was to look at the impact of dividend policy on agency costs. Since management expense ratio was used as another dependent variable, firms that did not disclose director remuneration were also excluded from the sample. This resulted in a sample of 67 firms.

3.2 MEASURING OF VARIABLES AND DESCRIPTION

The anticipated relationship between each independent variable, control variable and the dependent variable is discussed below. Furthermore, Table 1 summarises the variables, their measurements and their expected relationship with agency costs.

3.2.1 Dependent Variables

Agency costs: the study used two measures of agency costs. One of these is management expense ratio, which is a direct proxy for agency costs. It measures how effectively the management of a company can control its operating costs, such as management costs (executive salaries and bonuses) and other direct agency expenses (James, 1999). According to Ang et al. (2000), this measure captures excessive spending. It is calculated as average executive total compensation divided by average earnings before interest and tax, following the article by James (1999).

The asset utilization ratio, also known as the asset turnover ratio, is the second proxy for agency costs. It is used to determine the revenue loss caused by the inefficient utilisation of assets/resources (Ang et al., 2000). This measure is calculated by dividing annual sales by total assets, following various studies, including those by Ang et al. (2000); Singh and Davidson, (2003); McKnight and Weir (2009); Henry (2010); Hamdan (2018).

According to Singh and Davidson (2003), agency costs reflect the management's ability to utilise resources efficiently. A low asset turnover ratio shows that management is using the assets in a non-cash-flow generating ventures and vice versa, but a low management expense ratio suggests

that the management is efficiently controlling the operational expenses (Singh & Davidson, 2003). A high asset turnover ratio shows that an organisation has a lot of sales and cash flow generated from its assets. On the other hand, a low ratio suggests that management is mainly using these assets for non-cash purposes and projects that are unlikely to create value. The lower the asset turnover ratio, the more inefficient an organisation is. Conversely, a higher asset turnover ratio can be associated with the effective management of assets. Because of this, companies with significant agency conflict will have lower asset turnover ratio than those with less agency conflict (Singh & Davidson, 2003). According to Gitman (2009), the increase in asset turnover ratio shows that the management is able to effectively use the company's resources, and this can ultimately lead to a reduction in agency costs.

Asset turnover/utilisation ratio was included as an independent variable to allow the researcher to examine its potential influence on the dependent variable of interest, such as dividend policy or agency costs. It reflects the operational efficiency of a firm and may indirectly capture aspects of agency costs or managerial behavior. For example, higher asset turnover may indicate effective management practices or reduced agency costs associated with asset mismanagement or underutilization. Including asset turnover enables researchers to assess the relative importance of operational efficiency versus other factors, such as ownership structure or governance mechanisms, in explaining variations in dividend policy or agency costs

Exclusion of other proxies for agency costs: Other proxies for agency costs, such as managerial ownership, or board independence, were left out for several reasons. These include data unavailability. Data for these proxies were not available or reliable for all companies in the sample, limiting their inclusion in the analysis. These proxies also appeared to be correlated with each other which may have led to multicollinearity issues in the regression model, affecting the interpretation of coefficients.

3.2.2 Independent Variables

Dividend policy: dividend payout ratio was used to measure dividend policy as adopted in the study of Bhomoyi (2019). It was measured by dividends per share divided by earnings per share.

Another measure of dividend policy used was dividend yield, which is calculated as dividends per share divided by share price, following the studies by Bhomoyi (2019), Hamdan (2018) and Belden et al. (2005). Prior studies found that regular payment of dividends can help minimise the agency costs as they allow management to maintain a steady flow of cash (Jensen & Meckling (1976); Grossman and Hart (1982); Harris and Raviv (1990); and Stulz (1988)). Another study by Belden et al. (2005), found that dividends lower agency costs by reducing cash flow, which management may use to their advantage or to fund non-profit projects from which the shareholders will never profit.

Institutional ownership: is a fraction of a company's shares held by institutional investors (Chung & Zhang, 2009). It was measured by the percentage of stock held by institutions following the studies by Bhomoyi (2009) and Hamdan (2018). The ownership structure is one of the most crucial elements that sets the governance framework for companies. It gives institutional investors the ability to monitor the company's management practices. According to Bhomoyi (2019), institutional ownership could have a negative or positive relationship with the dividend payout ratio. If a company's dividend payout ratio is negatively affected by institutional ownership, this could indicate that the company's management is unresponsive to the agency problems of its shareholders. A study conducted by Wen and Jia (2010) revealed that institutional ownership negatively affects dividend yield of insurance and hedge fund businesses as well as for bank holding companies. These results aim to support the hypothesis that institutional ownership reduces agency problems, aligning management interests with those of shareholders. Institutional owners have the means and the desire to monitor the performance of managers given their financial muscle and huge need to protect their investments. Previous studies by Osagie et al., (2005) and Cornett et al., (2007), showed that companies with a significant amount of institutional ownership were more likely to observe management behavior, thus leading to a reduction in agency costs.

Financial leverage: is a measure of a company's degree of debt based on the ratio of total liabilities to total assets. It was measured by total liabilities divided by total assets following the studies by Bhomoyi (2019) and Hamdan (2018). Furthermore, the combined effect of both dividend yield ratio and leverage on agency costs was used a control variable. According to the agency theory, paying out high dividends reduces the company's cash flows, which means that it needs to borrow

money from the markets to fund its investments (Jensen, 1986). This concept also states that lending banks can play a vital role in monitoring the activities of corporate management to ensure that the company uses the resources efficiently (Ang et al., 2000). Furthermore, a study by Grossman and Hart (1982) shows that corporate debts can force managers to give less in bonuses and improve their leadership skills in order to avoid job loss and bankruptcy. Khalid et al., (2011) investigated the relationship between leverage and dividends in the UK but found no evidence of a substantial connection. However, Al-Kuwari (2009) discovered a strong inverse relationship between leverage and dividend payment ratio. Similar to studies conducted by other researchers such as Myers and Majluf (1984), Williams (1987) and Lasfer (1995), we expected that this variable would have a negative effect on the agency cost of JSE-listed companies.

Foreign ownership: foreign ownership is a measure of the percentage of foreign ownership (Manos, 2002). It promotes operational efficiency and performance improvement, thus increasing asset turnover and reducing agency costs. Foreign ownership can also act as a disciplining force in the market (Lindemanis et al., 2022). This is in line with the agency theory, which states that the presence of foreign control within a company can bring about monitoring (Bhomoyi, 2019).

Director ownership: the amount of stock owned by the directors serves as a proxy for director ownership. This follows a study by Bhomoyi (2019). It is expected to have a negative relationship with agency costs. According to Haye (2014) and Williams (2015), executive stock ownership can help reduce agency problems, as it allows the board to monitor the company's capital spending and cash management activities more effectively. Haye (2014) found in their study that increasing the dividends and reducing the ownership of directors would reduce the friction between the control and ownership of the company. As a result, directors would become more independent and less entrenched.

3.2.3 Control variables

Firm size: the variable firm size was measured using the natural logarithm of the company's total assets. This approach is consistent with various other studies, such as those conducted by Sharma (2011), Adjaoud and Ben Amir (2010), Akhigbe and Whyte (2012), Thanatawee (2013), and

Hamdan (2018). The size of a company can affect the payment of dividends, thereby aligning the interests of the management with those of shareholders (Bhomoyi, 2019). It's widely believed that large firms are prone to encountering issues with agency problems. International research has shown that a positive correlation exists between dividends pay out and the total assets of the company (Adjaoud & Ben-Amir, 2010; Warrad et al., 2012; Thanatawee, 2013).

Cash flows: A measure of how much cash a business brought in or spent in total over a period of time. It was measured by free cash flow, calculated as operating cash flow less capital expenditures. The concept of the agency theory states that the goal of managers is to maximise their personal wealth instead of that of the stockholders (Smith, 1976). The agency theory also states that a positive relationship exists between agency costs and the company's cash flows. Jensen (1986) noted that an excessive amount of free cash flow can result in waste and internal inefficiency and it can also increase the agency costs and thus reduce the wealth of the stockholders. On the other hand, Wang (2010) found that the increase in free cash flows can enhance the firm's performance, but it can cause conflicts of interest between the management and the shareholders.

Profitability: the return on equity was used to measure firm's profitability, following the studies by Aivazian et al., 2003; and Hasnain et al. (2010). It shows how much shareholders are compensated for their investment and is calculated as net profit divided by shareholder's equity. Greater profits lead to more revenue distributed to the shareholders. Prior studies revealed that there is a positive relationship between profitability and dividend payout (Jensen & Meckling, 1976; Amidu & Abor, 2006; Anil & Kapoor, 2008). This relationship can be used to determine if profitability can help mitigate agency problems. A study by Panigrahi and Vachhani (2021) found that the return on equity can rise as the company uses its assets more efficiently, leading to reduced agency costs.

Table 1: Measurement of variables

Variables	**Definitions**	**Measurement**	**Expected relation**

Agency costs	Represents agency costs.	Assets turnover ratio, which is annual sales divided by total assets. Another measure is management expense ratio calculated as average executive total compensation divided by average earnings before interest and tax.	
Dividend policy	Dividend policy is a way a company distributes its profits to its shareholders.	Dividend payout ratio, measured as dividends per share divided by earnings per share and dividend yield, measured as dividends per share divided by share price, were used to measure dividend policy.	(-)
Institutional ownership	Ratio of equity shares held by financial institutions, insurance companies, mutual funds and commercial banks to total equity shares.	Fraction of shares owned by the institutional investors.	(-)
Firm size	The natural logarithm of the average of total sales.	Natural logarithm of the company's total assets.	(+/-)
Financial leverage and combination of financial leverage & dividend	Indicates the degree of a company's indebtedness.	Total debt divided by total assets.	(-)
Cash flows	A measure of how much money a company makes or spends over a certain period.	Free cash flow.	(+)

Profitability	Profitability is where the dividend policy decision to pay dividends is made.	Return On Equity (ROE) (Net profit / Equity)	(-)
Foreign ownership	The total number of shares that foreign entities hold in a company divided by the total number of shares. Foreign entities include foreign collaborations, foreign financial institutions and foreign nationals.	Measure of the percentage of foreign ownership.	(-)
Director ownership	The total number of shares held by the company's directors and their relatives divided by the total number of shares	Measured by the percentage of stock owned by the directors.	(-)

Sources: Hamdan (2018); Bhomoyi (2019); Manos (2002)

Note: From Table 1, (-) and (+) signs represent a negative-relationship and positive-relationship with agency costs, respectively.

3.3 CONSTRUCTION OF MODELS

The dependent variable is agency costs measured by asset turnover ratio and management expense ratio. The independent variable is dividend policy measured by dividend payout ratio and dividend yield, and other independent variables are institutional ownership, foreign ownership, financial leverage, and director ownership. Control variables are firm size, profitability and free cash flow.

The impacts of dividends policy, in addition to other control variables, are tested using the following models:

Model 1: $\text{AgencyCosts}_{it} = \alpha + \beta_1 \text{DivYd}_{(i-1t)} + \beta_2 \text{DirectOwn}_{it} + \beta_3 \text{InstOwn}_{it} + \beta_4 \text{ForeOwn}_{it} + \beta_5 \text{Leverage}_{it} + \beta_6 \text{Profit}_{it} + \beta_7 \text{Cashflow}_{it} + \beta_8 \text{Size}_{it} + \varepsilon_{it}$

$AgencyCostsit = \alpha + \beta Model\ \ 2$: $AgencyCosts_{it} = \alpha + \beta_1 DivPoR_{(i-1t)} + \beta_2 DirectOwn_{it} + \beta_3 InstOwn_{it} + \beta_4 ForeOwn_{it} + \beta_5 Leverage_{it} + \beta_6 Profit_{it} + \beta_7 Cashflow_{it} + \beta_8 Size_{it} + \varepsilon_{it}$

Where $AgencyCosts_{it}$ is agency costs measured by asset turnover ratio and management expense ratio. $DivPOR_{it}$ is dividend payout ratio for the firm and $DivYd_{it}$ is dividend yield for the firm i in the previous year i – 1. $DirectorOwn_{it}$ is director ownership. $InstOwn_{it}$ is institutional ownership. $ForeOwn_{it}$ is foreign ownership. $Leverage_{it}$ is financial leverage. $Prof_{it}$ is profitability. $Cashflow_{it}$ is free cash flows. $Size_{it}$ is firm size. α is the intercept. β is the regression coefficient and ε is the error term (Hamdan, 2018).

3.4 PANEL DATA

When cross-data and time series are combined, we get panel data that provides more information with less internal correlation, better efficiency, and more freedom (Gudjratic, 2015). Despite the various advantages of this approach, it is still possible that there is heterogeneity in these units (Adams et al., 2010; Wintoki et al., 2012; Liu et al., 2015). Unobserved heterogeneity is a problem that emerges when there are variables that control the relationship between the distribution and agency costs of JSE-listed firms. This study aimed to avoid various measurement issues by using a panel regression approach.

There are two types of panel regression models: fixed-effect (FE) and random-effect (RE). The assumptions made regarding the likelihood of a correlation between cross-sectional units (firms), the degree of error (other factors impacting agency costs), and the regressed variables (dividend policy and other control variables) determine the trade-off between the two approaches (Hamdan, 2018). If the two components of the model are not correlated, the RE approach is better than the FE approach. This was confirmed by the Hausman test, where the null hypothesis states that the capabilities of the two methods are equivalent. However, if the null hypothesis is rejected, then the FE approach is considered appropriate and RE approach inappropriate.

3.4.1 The Fixed Effects Panel Regression Model

The fixed effects panel regression model enables the researcher to examine how predictor and result variables relate to one another inside an entity, in this case, a corporation. The unique characteristics of every company may or may not have an impact on the explanatory factors. The fixed effects model presupposes a relationship between the error term of a company and the predictor factors. Since it is anticipated that each first time-invariant qualities are distinct, the entities error term and constant shouldn't be correlated with other personal traits (Torres-Reyna, 2007). In order to evaluate the overall impact of the predictors on the dependent variable (Torres-Reyna, 2007), the model eliminates the influence of time invariant traits. It also takes into account any potential inter-firm differences in the degree of individual heterogeneity.

3.4.2 The Random Effects Panel Regression Model

According to Hove (2017), the random effects regression model presupposes that there is no correlation between the explanatory variables and the unobservable factors. The difference between a fixed and a random effects model is that the former assumes that the variations across entities are random and not related to the independent variables (Torres-Reyna, 2007). When an observer thinks that differences between entities have an impact on the dependent variable, the random effects model should be used (Torres-Reyna, 2007). A disadvantage of using random effects may be that some variables may not be available, resulting in omitted variable bias. This is because the researcher must identify which individual characteristics may or may not influence the explanatory variables (Torres-Reyna, 2007). The random effects model assumes that firm-level variation is random and unrelated to explanatory variables (Singh & Bagga, 2019). A random effects model is recommended when analysing a sub-18 sample population or unbalanced panel data (Rossi, Cebula and Barth, 2017).

To formally test whether the fixed or random effects model is appropriate for the study, the author will run a Hausman test.

The hypothesis will be:

H_0: The preferred model is the random effects model

H_1: The preferred model is the fixed effects model

The Hausman test will test whether the unique errors (μi) are correlated with the regressors with the null hypothesis assuming that they are not (Torres-Reyna, 2007). The most suitable model for the study is the random effects model if the null hypothesis is accepted; if it is rejected, the fixed effects model is suitable.

3.4.3 Generalised Method of Moments (GMM)

The Generalised Method of Moments (GMM) offers a reliable technique for getting consistent, normally distributed estimates of the parameters of statistical models (Hall, 2005). The strategy was initially put forth to address two endogeneity components brought on by the simultaneity and unobserved heterogeneity of the variables (Dube, 2018). The GMM has several benefits, including the ability to provide estimates with any positive definite weighting matrix and the method's asymptotically superior efficiency when heteroscedastic errors are included (Hall, 2005). The author will use a two-step GMM to analyse the data if the study's regression analysis has endogeneity issues.

3.5 CORRELATION COEFFICIENT ANALYSIS- PEARSON CORRELATION TEST

A Pearson correlation test using correlation matrix was used to test for multicollinearity between variables. The concept of correlation refers to the measurement of the relationship between two or more variables. It can help determine whether the two are negatively or positively related (Chikweru & Isaac, 2018). The degree to which a relationship or association exists between two or more variables is expressed by the use of correlation coefficients. The size and direction of correlation coefficients might be high or low, positive or negative. The range of correlation coefficients is -1 to +1, which denote perfect negative and positive correlation coefficients, respectively. A correlation coefficient of 0 denotes no connection (zero association). Additionally, correlation coefficients between 0.40 and 0.60 are considered moderate, whereas correlation coefficients above 0.60 are considered strong (Chikweru & Isaac, 2018; Williams, 2015).

3.6 PANEL UNIT ROOT TEST

The study determined if the data variables had stationarity properties before running regression models. The stationarity test is used to determine the properties of varying time periods such as autocorrelation structure, variance, and mean. It was performed using an Augmented Dickey Fuller analysis. If the data did not support stationarity, the study employed sequential differencing strategy until the stationary state had been reached, as adopted from the study by De Wet & Mpinda (2013) and Bhomoyi (2019). The reason for unit root test is because the non-stationarity issue can affect the quality of fit measures and lead to errors in the results.

3.7 CHAPTER SUMMARY

This provided an overview of the research approach, data collection methods, sampling techniques and measurement of key variables used in examining the relationship between dividend policy and agency costs. Panel data analysis was also discussed in this chapter covering fixed effect, random effect and the General Method of Moments (GMM) model.

CHAPTER 4

ANALYSIS AND DISCUSSION OF RESULTS

4. INTRODUCTION

This chapter aims to present data analysis and results of the study. The results will be presented as follows; first, descriptive statistics analysis, correlation analysis, unit root tests, panel data regression analysis, and finally robustness tests results.

4.1 DESCRIPTIVE STATISTICS ANALYSIS

Descriptive statistics tests was carried out to provide a comprehensive overview of the data's distribution and characteristics, offering insight into the variables' central tendency, and variability.

Table 1 shows the descriptive statistics for the variables used in the study. The result produced include: mean, minimum, maximum and standard deviation. The data shows that the average agency cost measured by asset turnover is 1.18, with values ranging from 0 to 4.86. The management expense ratio mean value is 0.0167, which suggests a relatively low value. The mean director ownership level is estimated to be 10.40%, which implies that, on average, about 10% of the company's shares are owned by its directors. But, the values of the skewness and kurtosis indices suggest that the ownership levels of directors vary significantly among the sampled JSE listed companies. The dividend payout ratio is estimated to be at around 95.44%. This indicates that, on average, companies distribute around 95.44% of their earnings as dividends, with a range of 0 to 97.75 for minimum and maximum value. The average dividend yield ratio is also estimated to be 4.79%. This implies that, on the average, companies are providing a yield of around 4.79% on their stocks. The financial leverage, measured by total debt to total assets, had a mean of 21.43%, with a range of minimum 0 to maximum 76.89%. This shows that there is a high volume of debt among the JSE-listed companies, the highest being at 76.89%.

Table 2: Descriptive Statistics

	ATO	MGT EXP	DIRS	DIV PO	DIV YD	LEV	LEV DEBT_ASSET	SIZE	FOREIGN	CASH	INST	LOG SIZE	ROE
Mean	1.182444	0.01668	10.3981	95.439761	4.790041	2.737974	21.43141706	35.31734	6.92294	26.19321	70.1032	4.23665	18.215
Median	0.98125	0.0052	0.285	46.7987	3.68135	2.16865	20.0145	17098.1	0	726.663	68.662	4.232948	16.17
Maximum	4.8588	3.36562	40.66	97.7502	14.4587	39.7028	76.8931	36.5798	58.59	83.584	87.191	5.563241	29.728
Minimum	0	-1.36749	0	0	0	0	0	11.11692	0	-56.80.73	0	2.045984	-13.757
Std. Dev.	0.872839	0.14958	147.491	374.60181	6.691512	2.786927	15.91463418	47314.91	13.33132	7190.095	29.9577	0.562725	27
Skewness	1.661201	13.8146	27.3385	10.046907	13.72746	9.69826	0.750334453	3.128055	2.382847	6.210909	0.250712	-0.423339	2.2529
Kurtosis	6.20938	346.124	752.217	120.84978	282.7373	123.7346	3.37248261	16.58394	8.173316	54.94561	3.827018	3.534179	32.73
Jarque-Bera	677.4966	3762300	1.8E+07	453781.53	2508463	474760	75.90632707	7101.276	1570.833	90571.57	29.69848	31.82018	28707
Probability	7.65E-148	0	0	0	0	0	3.29E-17	0	0	0	3.56E-07	1.23E-07	0
Sum	901.0222	12.7084	7923.36	72725.098	3650.011	2086.336	16330.7398	26911810	5275.28	1995923	53418.63	3228.327	13880
Sum Sq. Dev.	579.7663	17.0262	1.7E+07	106788477	34074.79	5910.656	192742.7173	1.7E+12	135248.1	3.93E+10	682969.7	240.9779	554757
Observations	762	762	762	762	762	762	762	762	762	762	762	762	762

Source: Bloomberg & Researcher's own compilation, 2023.

The average institutional ownership for JSE-listed firms was 70.10%, ranging from min 0 to max 87.19%. This implies that, on average, institutional investors hold about 70.10% of the JSE listed companies' shares. Institutional ownership was seen to be higher than director ownership, which indicated that it has a stronger influence over the company. According to Table 3, the average ownership stake of foreign companies in JSE-listed companies is 6.92 and ranged from min 0.000 to max 58.59. This indicates that JSE-listed companies have experienced increased business confidence up to a maximum of 58.59. This also indicates that nearly 7% of foreign businesses are more confident in JSE-listed companies and as a result ensures that the management of JSE-listed companies aligns their interests with those of their shareholders.

The mean cash flow of JSE-listed firms was 26.19%, with a range of min -56.80 to max 83.58%, indicating that management has access to more cash than it needs. The mean Return on Equity of JSE listed firms is typically around 18.22%, with a range of min -13.75 to max 29.73%. This means that, on average, companies are able to earn a return on their investment of around 18%, which is a positive indicator for JSE-listed companies' performance.

4.2 CORRELATION COEFFICIENT ANALYSIS OF THE VARIABLES

The objective of this study was to answer the main research question regarding the relationship between dependent and independent variables. The researcher had to first examine the possibility of multicollinearity between the two variables in the chosen research model. The existence of multicollinearity is confirmed if the correlation coefficient between the two variables was close to positive or negative one. But after examining the variables' correlation coefficients, the researcher was not able to confirm this, as shown in Table 3.

Table 3: Correlation Analysis of the variables

Correlation Analysis													
Prob.	ATO	DIR	DIV PO	DIV YD	FIN LEV	LEV DT TO AT	SIZE	FOR-OWN	FCF	INST	LOG_SIZE	MGT RT	ROE_
ATO	1												

DIR	-0.0040	1											
	0.9148	-----											
DIV PO	-0.006	-0.008	1										
	0.8678	0.8247	-----										
DIV YD	0.0319	-0.0051	-0.0008	1									
	0.3784	0.8886	0.9827	-----									
FIN LEV	0.07856	-0.0116	-0.0365	-0.0265	1								
	0.03	0.7497	0.3137	0.4637	-----								
LEV DT TO_AT	-0.2652	-0.0198	-0.0657	-0.0944	0.4509	1							
	9.4289	0.5851	0.0697	0.0091	1.7399	-----							
SIZE	-0.201	-0.0327	-0.0091	0.0231	-0.0161	0.1302	1						
	4.7283	0.3668	0.8011	0.5238	0.6566	0.0003	-----						
FOR-OWN	-0.1822	0.1393	-0.0563	-0.0203	-0.1069	-0.0601	0.0963	1					
	4.0109	0.0001	0.1199	0.5761	0.0031	0.0974	0.00778	-----					
FCF	-0.0628	-0.0206	-0.037	0.154	-0.0348	-0.0479	0.6345	-0.0164	1				
	0.0826	0.5699	0.3074	1.9374	0.3373	0.1855	3.3403	0.6511	-----				
INST	0.0473	-0.0426	-0.03988	0.2007	-0.0585	-0.0275	-0.0149	0.0157	-0.0087	1			
	0.1914	0.2399	0.2712	2.2379	0.1064	0.4486	0.6812	0.6658	0.8106	-----			
LOG_SIZE	-0.2146	-0.0655	0.0229	-0.0261	0.054	0.1887	0.7655	0.0767	0.4331	-0.0513	1		
	2.1087	0.0704	0.5276	0.4716	0.1361	1.504	7.4888	0.0342	3.1842	0.1571	-----		
MGT_RATIO	-0.0171	-0.0044	-0.0326	-0.153	-0.0098	-0.0122	-0.0647	0.0259	-0.0313	-0.0328	-0.1354	1	
	0.6375	0.902	0.3689	2.1918	0.7866	0.7358	0.0741	0.4738	0.3884	0.365	0.0002	-----	
ROE_	0.2425	0.0041	-0.1331	0.1007	0.0617	-0.098	-0.0116	-0.0573	0.2411	0.0479	-0.0328	-0.0434	1
	1.118	0.9092	0.0002	0.0054	0.0885	0.0067	0.7489	0.1133	1.4721	0.1862	0.3654	0.2314	-----

Source: Researcher's own compilation, 2023

4.3 UNIT ROOT TEST RESULTS

The study used a panel unit root test, Augmented Dickey Fuller-Fisher Chi-square (ADF) test to determine the variables' stationary properties. This was to avoid spurious regression and issues with the goodness-of-fit measures. The results indicated that all variables were stationary at a 1% significance level except for financial leverage and free cash flow, which was stationary after first differencing. The results are shown in table 3 below.

Table 4
Unit Root-ADF tests

Variables	ADF– Fisher Chi-square
	t-statistic
Asset turnover ratio	183.536***
Director ownership	200.252***
Dividend payout ratio	180.805***
Dividend yield	196.265***
Institutional ownership	228.364***
Director ownership	177.316***
Management ratio	201.075***
Profitability (ROE)	181.383***
D(Financial leverage)	320.599***
D(Free cash flow)	356.522***

Notes: This table reports the unit root ADF test results. Probabilities for Fisher tests are computed using an asymptotic Chi-square distribution. Significance at *10%, **5% and ***1% levels. All variables are significant at ***1% level

4.4 PANEL DATA REGRESSION ANALYSIS

4.4.1 Hausman Test

The Hausman test evaluates the correlation between a model's random effects and helps determine if a fixed or random effects model is better suited. Generally, the null hypothesis is rejected if the

p-value is lower than the significance level of 0.05. For Model 1, 2 and 4 the p-value is less than 0.05, therefore, the use of a fixed effects model instead of random effects model is best suited. For Model 3, the p-value is greater than 0.05, which indicates that the random effects model should be preferred over the fixed effects model. The results are shown in the table 4 below.

Table 5
Hausman test: Model 1 to 4

Hausman Test								
	Model 1		Model 2		Model 3		Model 4	
	Chi-Sq. Statistic	Prob.	Chi-Sq. Statistic	Prob.	Chi-Sq. Statistic	Prob.	Chi-Sq. Statistic	Prob.
Cross-section random	45.5335	0.0000	43.4907	0.0000	2.67913	0.9529	15.7399	0.0463

Notes: For Model 1 asset turnover and dividend payout ratio was used together, model 2 asset turnover and dividend yield, model 3 management expense ratio and dividend payout ratio, model 4 management expense ratio and dividend yield.

4.4.2 Panel Regression Models

Table 6: Panel regression models

Variables	Panel regression models			
	Model 1	**Model 2**	**Model 3**	**Model 4**
	Coefficient	Coefficient	Coefficient	Coefficient
Dividend Payout Ratio	-2.13E-05		-1.68E-05	
Dividend Yield Ratio		-0.0037*		-0.0058***
Director Ownership	-0.0002	-0.0002	-0.0005	0.0009
Financial Leverage	-0.0029**	-0.0030**	6.66E-05	0.0001
Free Cash Flow	6.66E-06**	6.76E-06**	4.82E-07	4.05E-07
Institutional Ownership	0.0014***	0.0015***	-0.0003	-0.0002
Log Size	-0.9075***	-0.9033***	-0.0411***	-0.0424
Profitability-ROE	0.0022***	0.0023***	-0.0003	-0.0001
R-squared	0.8810	0.8815	0.0263	0.1309

Adjusted R-squared	0.8677	0.8682	0.0166	0.0305
F-statistic	65.9514	66.2601	2.6965	1.3040
Prob.(F-statistic)	0.0000	0.0000	0.0092	0.0529
Durbin-Watson stat	0.8904	0.8978	1.9187	2.0633

Notes: The table reports panel regression results for random and fixed effects models. Two variables were used to measure agency cost being; management expense ratio and asset turnover ratio. Similarly, two variables were used to measure dividend policy being; dividend payout ratio and dividend yield. For Model 1 asset turnover and dividend payout ratio was used together, model 2 asset turnover and dividend yield, model 3 management expense ratio and dividend payout ratio, model 4 management expense ratio and dividend yield. Significance at *10%, **5% and ***1% levels.

Model 1: Asset turnover ratio and dividend payout ratio

Interpretation of results

The adjusted R-squared value is 0.8677, which indicates that approximately 86.77% of the variation in asset turnover ratio can be explained by the independent variables. The F-statistic analyses the model's overall significance, and in this instance, it is statistically significant at the 1% level (p-value = 0.000000), demonstrating that the model as a whole is a good fit. Although the Durbin-Watson statistic of is 0.8904 indicating the possibility of positive autocorrelation, the Pearson correlation analysis did not pick up any serious multicollinearity among explanatory variables.

Based on the results in table 5, institutional ownership, log size and profitability, have statistically significant effects on the asset turnover ratio at a 1% level, free cashflow, and financial leverage are statistically significant at a 5% level. But the coefficients for director ownership, dividend payout ratio are not statistically significant.

It can be observed from table 5 that free cash flow, has contradictory results i.e., it has a positive sign, in association with asset turnover ratio, which implies that it has a negative relationship with agency costs. These results are contradictory to the findings of Jensen and Meckling (1976) and Jensen (1986), who found that excessive free cash flow would result in wastefulness and internal inefficiency, which would ultimately lead to agency costs. However, Wang (2010) found similar

results that an increase in free cash flows can enhance the firm's performance, even though it can cause conflict of interest between the management and the shareholders.

Furthermore, the results show that dividend payout ratio, director ownership, financial leverage and log size have a negative relationship with asset turnover ratio, implying a positive relationship with agency costs. This is also contrary to prior studies by La Porta et al., (2000) and Jensen, (1986). La Porta et al., (2000) noted that by paying dividends, insiders return corporate earnings to investors and hence are no longer capable of using these earnings to benefit themselves, thus reducing agency costs. Jensen (1986) also stated that dividend payments might reduce the chances of managers investing the cash in projects that benefit them instead of stockholders, reducing agency costs. The study by Grossman and Hart (1982), indicated that financial leverage can force management to use resources efficiently and thus reduce agency costs, however, this study reveals contradictory results. The study shows that financial leverage negatively impacts asset turnover ratio, implying that it increases agency costs.

Among the independent variables, the variables institutional ownership and profitability have a positive impact on asset turnover ratio, suggesting that an increase in each of these variables is associated with an increase in the asset turnover ratio, thus implying a decrease in agency costs. The findings are consistent with previous research, which found that the relationship between agency costs and institutional ownership is negative (Wen & Jia, 2010).

4.4.3 Model 2: Asset turnover ratio and dividend yield ratio

Interpretation of results

The results for model 2 are similar to that of model 1 in that variables such as cash flow is statistically significant, however it has contradictory results as compared to prior studies. The results show that free cashflow has a positive relationship with asset turnover ratio, implying a negative relationship with agency costs. This suggests that free cash flow can reduce agency costs, but Jensen and Meckling (1976) and Jensen (1986) found that excessive free cash flow lead to agency costs. Furthermore dividend yield ratio appears to have a negative statistically significant relationship with asset turnover ratio, implying a positive statistically significant relationship with agency costs. The results suggests that dividend yield can be considered a significant factor in

increasing agency costs, which is not in line with studies by La Porta et al., (2000) and Jensen, (1986).

All independent variables have statistically significant except director ownership. The adjusted R-squared is 0.8682 indicating that approximately 86.82% of the variation in asset turnover ratio can be explained by the independent variables. The F-statistic shows that the model is a good fit (p-value=0.00000).

4.4.4 Model 3: Management expense ratio and dividend payout ratio

Interpretation of results

All the variables are not statistically significant with management expense ratio except for log size. Dividend payout ratio, director ownership, institutional ownership, log size and profitability ROE, all have a negative coefficient, implying that an increase in these variables will lead to a decrease in management expense ratio and subsequently a decrease in agency costs. This is in line with prior studies which found that a low management expense ratio suggests that the management is efficiently controlling the operational expenses (Singh, & Davidson, 2003). The free cash flow has a positive coefficient to management expense ratio, implying that it increases agency costs but this is not statistically significant (p-value = 0.7223). This is in agreement with agency theory, which states that a positive relationship exists between agency costs and the company's cash flows. Jensen (1986) noted that an excessive amount of free cash flow can result in waste and internal inefficiency and it can also increase the agency costs and thus reduce the wealth of the stockholders. Financial leverage shows a positive relationship with management expense ratio, meaning that it increases agency costs. This is contrary to prior studies ((Jensen, 1986; Ang et al., 2000; Grossman & Hart, 1982).

The adjusted R-squared value is 0.0166, indicating that the independent variables explain around 1.66% of management expense ratio's variation. The p-value of F-statistic at 0.0092 revealed that the model is a good fit, while the Durbin-Watson t-statistic of 1.9187 showed no evidence of autocorrelation.

4.4.5 Model 4: Management expense ratio and dividend yield ratio

Interpretation of results

All independent variables are not statistically significant (p-value > 0.05) with management expense ratio, except dividend yield ratio, which is significant at a 1% level. The dividend yield ratio has a negative coefficient implying that an increase in dividend yield ratio leads to a decrease in management expense ratio and thus reduces agency costs. This is in line with the prior studies by Cohen and Uliana (1990), who stated that sustainable dividend policy can mitigate various issues that can affect the efficiency of an organisation's operations, such as the excessive levels of management compensation. This finding also agrees with prior studies that payment of a dividend can help reduce agency costs (Jensen & Meckling, 1976; Grossman & Hart, 1982; Harris & Raviv, 1990; and Stulz, 1988). Institutional ownership, log size and profitability-ROE also have a negative impact on the management expense ratio just like in the third model. Free cashflow and financial leverage have a positive impact on management expenses ratio, implying that they increase agency costs. For financial leverage, this is contrary to prior studies that found that debt can force management to use resources efficiently and give less in bonuses and improve their leadership skills in order to avoid job loss and bankruptcy, thus reducing agency costs (Jensen, 1986; Ang et al., 2000; Grossman & Hart, 1982).

4.5 RESULTS OF GENERALISED METHOD OF MOMENTS (GMM)

Table 7: Panel regression model- GMM

	Panel regression model-GMM			
	Generalized Method of Moments (GMM) Model			
	Model 1	Model 2	Model 3	Model 4
Variables	Coefficient	Coefficient	Coefficient	Coefficient
Dividend Payout Ratio	0.0397		-1.11E-05	
Dividend Yield Ratio		-0.0016		-0.0058***
Director Ownership	0.0462	0.0171***	0.0008	0.0009
Financial Leverage	-0.0405	0.0084**	0.0001	0.0001
Free Cash Flow	-1.31E-05	1.48E-06	2.24E-07	4.05E-07

Institutional Ownership	0.0081	0.0019*	-0.0003	-0.0002
Log Size	-0.4506	-0.2499***	-0.0479	-0.0424
Profitability-ROE	0.0759	0.0079***	-0.0002	-0.0001
R-squared	-278.9843	0.1468	0.0879	0.1309
Adjusted R-squared	-281.7216	0.1384	-0.0174	0.0305
Durbin-Watson stat	1.0438	0.2122	2.0456	2.0633
J-statistic	0.6435	716.0000	3.15E-22	1.32E-20
Prob.(J-statistic)	0.4224	0.0000		

Notes: The table reports panel regression results for Generalized Method of Moments (GMM) Model. Two variables were used to measure agency cost being; management expense ratio and asset turnover ratio. Similarly, two variables were used to measure dividend policy being; dividend payout ratio and dividend yield. For Model 1 asset turnover and dividend payout ratio was used together, model 2 asset turnover and dividend yield, model 3 management expense ratio and dividend payout ratio, model 4 management expense ratio and dividend yield. Significance at *10%, **5% and ***1% levels

4.5.1 Model 1: Asset turnover ratio and dividend payout ratio

Interpretation of results

All the independent variables are not statistically significant (p-value > 0.05), however variables dividend payout ratio, director ownership, institutional ownership and profitability-ROE, positively affect the asset turnover ratio meaning they reduce agency costs. This is in line the study by Panigrahi and Vachhani (2021) who found that the return on equity can rise as the company uses its assets more efficiently, leading to reduced agency costs. Other studies revealed that dividend payout and institutional ownership can reduce agency costs, which is consistent with the results of the study (Jensen & Meckling, 1976; Grossman & Hart, 1982; Wen & Jia, 2010; Bhomoyi, 2019). On the other hand, variables free cash flow, financial leverage, and log size appear to have a negative impact on asset turnover ratio. The results on free cash flow agree with the findings of Jensen (1986) who noted that an excessive amount of free cash flow can result in waste and internal inefficiency, which leads to an increase in agency costs. The results on financial leverage and log size contradict prior studies.

4.5.2 Model 2: Asset turnover ratio and dividend yield ratio

Interpretation of results

All independent variables have statistically significant coefficients except dividend yield ratio and free cashflow. The value of the dividend yield ratio coefficient is -0.0016, which suggests that the dividend yield ratio negatively impacts asset turnover ratio. On the other hand, the director ownership coefficient is 0.0171, which indicates a favorable or positive correlation between director ownership and asset turnover ratio. The coefficient of financial leverage also shows a positive relationship between financial leverage and asset turnover ratio at a value of 0.0084. This is in line with prior studies which found that financial leverage reduces agency costs. Ang et al., (2000), found that financial leverage forces management to use corporate resources efficiently as they are monitored by the lending banks, thus reducing agency costs. The value of the free cash flow positive, implying that an increase in free cash flow results in an increase in asset turnover ratio and subsequently decreases agency costs.

The institutional ownership coefficient is 0.0019 indicating a positive correlation between the variable and asset turnover ratio. The log size coefficient is -0.2499 indicating a negative association between the variable and asset turnover ratio. The coefficient profitability-ROE is 0.0079, indicating a positive relationship between asset turnover and profitability. These results are inconsistent with prior literature, which suggest that dividend payment can help mitigate agency costs and excess free cash flow leads to high agency costs (Jensen, 1986).

The adjusted R-Squared value of 0.1384 indicates that the independent variable explains about 13.84% of the variation in the asset turnover ratio. The J-statistic 716.0000 is used to analyse the over-identification limitations in the GMM model's estimation. The value of 0.000000 indicates that the instruments are valid.

4.5.3 Model 3: Management expense ratio and dividend payout ratio

Interpretation of results

According to results under this model, all the variables are not statistically significant with management expense ratio. Furthermore all the independent variables are negatively correlated

with management expense ratio, except free cashflow and director ownership. This is similar to results under the results above.

The adjusted R-Squared is negative 0.0174, which suggests that the model might not be a good fit. This can be supported by the value of the J-statistic which is at 3.15E-22. Finally, the Durbin-Watson analysis shows that the model has no notable autocorrelation.

4.5.4 Model 4: Management expense ratio and dividend yield ratio

Interpretation of results

The dividend yield ratio variable is statistically significant and negatively correlated with management expense ratio. This implies that an increase in dividend yield ratio decreases management expense ratio, and subsequently reduces agency cost. This is in line with prior studies which found that dividends payment lower agency costs by reducing cash flow, which management may use to their advantage or to fund non-profit projects from which the shareholders will never profit (Jensen and Meckling (1976); Grossman and Hart (1982); Harris and Raviv (1990); Stulz (1988); Belden et al., 2005). Other independent variables do not exhibit a significant correlation with the management expense ratio. Free cashflow and financial leverage have a positive impact on management expense ratio, implying that they increase agency costs.

4.6 RESULTS OF THE COMBINED EFFECT OF DIVIDEND YIELD RATIO AND FINANCIAL LEVERAGE

Table 8
Panel regression models- Combined effects of dividend payment and financial leverage

Variables	Panel regression models			
	Model 1	Model 2	Model 3	Model 4
	Coefficient	Coefficient	Coefficient	Coefficient
Dividend Payout Ratio	-4.78E-05		-2.20E-05	
Dividend Yield Ratio		-0.0008		-5.09E-03***
Director Ownership	-0.0002	-0.0006	-0.0005	0.0009

Financial Leverage	-0.0034**	-0.0074***	-2.55E-05	-0.0010
Free Cash Flow	6.67E-06**	7.25E-06***	4.81E-07	5.03E-07
Institutional Ownership	0.0015***	0.0014***	-0.0003	-0.0002
Log Size	-0.9093***	-0.9161***	-0.0410***	-0.0436
Profitability-ROE	0.0022***	0.0023***	-0.0003	-0.0001
Dividend payment & Financial leverage	5.54E-06	0.0014***	1.21E-06	0.0003*
R-squared	0.881395	0.883669	0.02671	0.135085
Adjusted R-squared	0.86776	0.870404	0.015539	0.033653
F-statistic	65.11241	66.62017	2.390955	1.33178
Prob.(F-statistic)	0.0000	0.0000	0.015125	0.039554
Durbin-Watson stat	0.888542	0.913971	1.917969	2.082235

Notes: The table shows panel regression results for the combined effects of dividend payment and financial leverage. Significance at *10%, **5% and ***1% levels. All variables are significant at ***1% level

4.6.1 Model 1: Asset turnover ratio and dividend payout ratio

Interpretation of results

The results show that the combined variables' dividend yield and financial leverage have a positive relationship with asset turnover ratio, implying that the two variables combined can reduce agency costs. However the relationship is not statistically significant. This results supports the finding of Schooley and Barney (1994), who indicate that the payment of dividends compels companies to turn to the capital market more often to obtain more money, thus encouraging outside scrutiny of the company by prospective investors and hence minimizing agency problems and agency costs. The adjusted R-squared value of the asset turnover ratio is 0.8678. This indicates that approximately 86.78% of the variation in asset turnover ratio can be explained by the independent variables. The F-statistic p-value is 0.000000, meaning the model is a good fit.

4.6.2 Model 2: Asset turnover ratio and dividend yield ratio

Interpretation of results

The results indicate that the combined effect of dividend yield ratio and financial leverage on asset turnover ratio is positive and statistically significant. This implies that dividend yield combined with financial leverage can help reduce agency costs. The results supports Agency Theory which states that high dividend payment reduces a company's cash flow, meaning that it has to borrow money to fund its investments. This introduces monitoring by lending banks to ensure that the company uses its resources efficiently (Jensen, 1986; Ang et al., 2000similar to Model 1's results.

The adjusted R-squared value is 0.8704, indicating that about 87.04% of the variation in the asset turnover ratio is explained by the independent variables. The p-value (F-statistic) is 0.0000 meaning the results are statistically significant or a good fit.

4.6.3 Model 3: Management expense ratio and dividend payout ratio

Interpretation of results

The results of the combined effects of dividend payout ratio and financial leverage shows a positive relationship with the management expense ratio; however, these are not statistically significant. This implies that the combined variables dividend payout ratio and financial leverage increases agency costs. This contradicts agency theory which indicates that paying out dividends reduce the company's cash flows, which means that it needs to borrow money from the markets to fund its investments and as a result corporate debts force managers to give less in bonuses and improve their leadership skills in order to avoid job loss and bankruptcy, thus reducing agency costs (Jensen, 1986; Grossman and Hart, 1982).

4.6.4 Model 4: Management expense ratio and dividend yield ratio

Interpretation of results

According to the results the combined term 'dividend yield and financial leverage has a positive impact on management expense ratio, meaning that it increases agency costs. This results are contradictory to prior studies which found a negative relation between the combined term 'dividend payment and financial leverage' (Jensen, 1986; Ang et al., 2000; Grossman and Hart 1982).

4.7 ROBUSTNESS TESTS

The study conducted robustness tests to confirm the overall results of the relationship between dividend policy and agency costs and the results are discussed below. Agency cost, dividend yield, and control variables were split into high versus low categories to investigate potential nonlinear relationships or threshold effects between variables. This helped the researcher identify potential thresholds at which the relationship between variables changes direction or magnitude significantly. This approach enhances the understanding of how different levels of variables influence each other and the dependent variable, providing insights into nuanced relationships.

Table 9
Robustness tests

Dependent, Independent and control variables	Level	Asset turnover ratio (agency costs)	
		Coefficients	Adjusted R-squared
Asset turnover ratio	High	-0.0044	0.6532
	Low	0.0213***	0.5172
Dividend yield ratio	High	0.0043*	0.7741
	Low	0.0363***	0.7929
Firm size	High	0.0130*	0.8236
	Low	-0.0046	0.7261
ROE	High	0.0049	0.8131
	Low	0.0049	0.8131
Financial leverage	High	0.0097	0.7814
	Low	-0.0031	0.7848

Notes: The table The table reports robustness tests. Significance at *10%, **5% and ***1%.

4.7.1 Low asset turnover ratio

The value of the dividend yield ratio coefficient is 0.0213. It is statistically significant with a p-value of 0.0000 (p-value < 0.05), which indicates that there is a significant positive relationship between dividend yield ratio and asset turnover ratio. These results agree with the agency theory that dividend payments can reduce the chances of managers investing cash in projects that benefit them instead of stockholders, reducing agency costs (Jensen, 1986).

4.7.2 High asset turnover ratio

The dividend yield ratio coefficient is -0.0044, with a p-value of 0.2507, showing that there is no strong relationship between dividend yield ratio and asset turnover ratio. The results further show that dividend yield ratio negatively impacts asset turnover ratio—consistent with the overall results. The overall results could mean that firms with high asset turnover ratio overpowered firms with low asset turnover ratio.

4.7.3 Low dividend yield ratio

The results indicate a statistically significant positive correlation between the dividend yield ratio and the asset turnover ratio, which is shown by a positive coefficient of 0.0363 and a p-value of 0.0086. These results are not consistent with the overall results.

4.7.4 High dividend yield ratio

According to the results the relationship between dividend yield ratio and asset-turnover-ratio is negative and statistically significant. This is indicated by a negative coefficient of -0.0044 and p-value of 0.0602. These results are consistent with the overall results of the relationship between dividend yield ratio and asset turnover ratio. The reason for the results could be that companies with high-dividend yield may decide to distribute a larger proportion of their earnings to their shareholders as dividends, due to limited investment opportunities. Another possible explanation is that most companies tend to prioritise their dividend payments over investing in assets that can increase sales. These results support prior findings that although JSE-listed companies continuously pay dividends, they still experience agency problems (Hall, 1998; Piketty, 2014).

4.7.5 Small-sized firms

The results indicate that the correlation coefficient for dividend yield ratio is negative (-0.0046), which suggests that asset turnover ratio and dividend yield ratio have an inverse relationship. However, the relationship is not statistically significant as shown by the p-value of 0.1219. This is consistent with the overall results. Many small businesses, especially those that are in the growth phase and are looking to expand their operations, are likely to reinvest their earnings into their business. This strategy could result in an inverse relationship between dividend yield and asset turnover ratio. The adjusted R-squared value is 0.7261, which indicates that about 72.61% of the variation in asset turnover ratio can be explained by the model's independent variables.

4.7.6 Large-sized firms

The results indicate that the correlation between asset turnover ratio and the dividend yield ratio is positive (0.0130) and significant at the 10% level (p-value=0.0826). This suggests that large firms have low agency costs, which agrees with prior studies that showed that there is a positive relationship between dividend pay-out and the natural log of total assets (Adjaoud & Ben-Amir, 2010; Warrad et al., 2012; Thanatawee, 2013). Large firms are normally characterised by well-established business practices, efficient operations, and economies of scale. These factors can result in higher profits and operational effectiveness, which can lead to a positive correlation between asset turnover and dividend yield.

4.7.7 High return on equity

The results show a positive non-significant relationship between dividend yield ratio and asset turnover ratio. This is shown by a dividend yield ratio coefficient of 0.0049 and p-value of 0.5645. This is in line with prior studies that revealed that there is a positive relationship between profitability and dividend payout (Jensen & Meckling, 1976; Amidu & Abor, 2006; Anil & Kapoor, 2008).

4.7.8 Low return on equity

The results for low and high ROE are the same. The results show a positive non-significant relationship between dividend yield ratio and asset turnover ratio. This implies that return on equity could not be considered a significant factor in the reduction of agency costs. Nonetheless, it can still play a role in helping resolve agency problems-disputes among managers and shareholders.

4.7.9 High financial leverage firms

The dividend yield ratio coefficient is 0.0097 and the p-value is 0.4107, showing a positive non-significant relationship between dividend yield ratio and asset turnover ratio, for highly leveraged firms. The results imply that financial leverage can help reduce agency costs even though it cannot be considered as the main contributor of the reduction in agency costs. This is in line with prior studies which indicated that financial leverage can put managers under pressure to use resources efficiently and make sound financial decisions, thus helping in minimizing agency costs (Jensen, 1986).

4.7.10 Low financial leverage firms

The results are the same as for highly leveraged firms. The dividend yield ratio coefficient is 0.0031 and the p-value is 0.2035, showing a positive non-significant relationship between dividend yield ratio and asset turnover ratio for highly leveraged firms. This also implies that financial leverage can help reduce agency costs.

4.8 CHAPTER SUMMARY

The chapter presented the findings of the research on the relationship between dividend policy and agency cost of JSE non-financial listed firms. It delves into the empirical analysis of data collected and discusses the implications of the results for theory and practice. Statistical techniques such as regression analysis, correlation analysis, and descriptive statistics were employed to analyze the

data and test the research hypotheses. The results were interpreted in the context of existing theoretical frameworks and prior empirical research.

CHAPTER 5

CONCLUSION AND RECOMMENDATIONS

5.1 CONCLUSION

According to La Porta et al. (2000), management can easily use their position to advance their own personal interests. As a result, owners are usually looking for other ways to protect their interests. One of the most important instruments that they use is their dividend policy and financial leverage. We determined the range of variables that JSE-listed firms have adopted to address agency problems and limit agency costs. We then tested the effect of these variables, independent and control variables, on agency costs by analysing the data collected from 67 firms, for the period 2011 to 2022.

When using asset turnover ratio as a proxy for agency cost, the results showed that dividend payout ratio has a negative relationship with asset turnover ratio, implying a positive relationship with agency costs. These results are inconsistent with prior studies that a dividend payment might reduce the chances of managers investing the cash in projects that benefit them instead of stockholders, thereby reducing agency costs (Jensen, 1986). However, these results could explain the finding of the studies by Hall (1998) and Piketty (2014), who revealed that although the JSE-listed companies continuously pay dividends, they still experience agency problems. Other variables such as director ownership, financial leverage and log size also had a negative relationship with asset turnover ratio. Free cash flow also showed contradictory results i.e., it has a positive sign, in association with asset turnover ratio, which implies that it has a negative relationship with agency costs. These results are contradictory to the findings of Jensen and Meckling (1976) and Jensen (1986), who found that excessive free cash flow would result in wastefulness and internal inefficiency, which would ultimately lead to agency costs. This could mean that JSE-listed firms have high levels of cash flow and hence the reason for agency costs. The variables “institutional ownership” and “profitability” had a positive impact on asset turnover ratio, implying that they reduce agency costs, which is consistent with prior studies such as Wen and Jia (2010).

For management expense ratio as a proxy for agency costs, the results show that dividend payments can help reduce agency costs, which is consistent with the agency theory. Other variables such as director ownership, institutional ownership and log size also decreased management's expense ratio, subsequently decreasing agency costs. Financial leverage and free cash flow were found to increase agency costs, i.e. had a positive impact on the management expense ratio.

For the second research question; the effect of financial leverage on agency costs. The results show that financial leverage does not reduce the agency costs of JSE-listed firms. However, the results show are not statistically significant. The results of the study contradicts prior studies that found that financial leverage can be used as another measure to reduce agency costs as it forces management to use resources efficiently and give less in bonuses and improve their leadership skills in order to avoid job loss and bankruptcy (Jensen, 1986; Ang et al., 2000; Grossman & Hart, 1982).

The results of the effects of the combined term, "dividend yield and financial leverage" show that the combined variables have a positive effect in reducing agency costs. This supports the agency theory, which indicated paying out high dividends reduces the company's cash flows. This means that it needs to borrow money from the markets to fund its investments, thus ensuring that the company uses the resources efficiently and reducing agency costs (Jensen, 1986; Ang et al., 2000). However contrary results were found when the combined term was put against management expense ratio.

The robustness test, however, showed that there is a significant positive relationship between dividend payments and agency turnover ratio (a negative relationship with agency costs) for high dividend yield firms and a significant negative relationship for low dividend yield firms. This could further explain the findings of the prior studies, that JSE-listed firms pay dividends and still have agency costs.

For financial leverage, the robustness test showed that there is a positive relationship between dividend yield and asset turnover ratio (a negative relationship with agency costs) for both high- and low-leveraged firms. However, the relationship is not statistically significant. This means that financial leverage could not be considered a significant factor in the reduction of agency costs. Nonetheless, it can still play a role in helping resolve agency disputes among managers and shareholders.

5.2 RECOMMENDATIONS

These recommendations are based on the current results of JSE-listed companies, which were taken from 2011 to 2022. JSE-listed firms are urged to adopt debt financing as it can help minimise agency costs and improve market discipline. JSE-listed firms are also encouraged to use INST ownership, to reduce agency costs. The results of the study showed that agency costs of JSE-listed firms decreased when institutional ownership was present. It is also recommended that companies reduce the cash flow availability that they have, which increases agency costs and thereby contributes to agency problems. The study also suggests that JSE-listed firms continue to pay dividends as this is shown to have a negative relationship with agency costs, meaning that the payment of dividends can reduce agency costs.

5.3 SUGGESTIONS FOR FUTURE RESEARCH

Similar research is recommended where other proxies for agency costs would be used besides the one used by the researcher. The results on the relationship between dividend policy and agency costs of non-financial firms listed on the JSE are contradictory to the prior studies, which clearly require further investigation. Future research should also investigate the effects of dividend policies on the agency costs of different sectors or industries within non-financial companies listed on the JSE, to determine which industry or sector is mostly experiencing agency costs. Furthermore, inclusion of dummy variables to capture the effects of Covid-19 on agency costs in future research would add insight on whether agency costs were affected by the pandemic.

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