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Institutional determinants of dividend policy: the case of African listed firms

by

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Abstract

This study examines the institutional determinants of dividend policy of African listed firms over the period from 2006 to 2020. While existing research extensively examines institutional influences in developed markets, there is a significant gap in understanding these dynamics within the African context. Utilizing a panel regression approach with generalized method of moments (GMM) estimations, the study comprises three essays. The first essay offers a comprehensive analysis of institutional determinants, specifically examining how investor protection, press freedom, property rights, financial development, and corruption shape dividend policy in African firms. The results underscore the pivotal role of institutional factors, highlighting investor protection, financial development, and press freedom as key determinants. Based on these findings, policymakers should prioritize strengthening investor protection laws, advancing financial sector development, and ensuring press freedom to create a more attractive environment for investment. The second essay explores the relationship between innovation and dividend policy in Africa, revealing a significant negative correlation. It also investigates whether institutional development influences this relationship. Results indicate that institutional development moderates the innovation-dividend policy relationship. The negative relationship is pronounced in countries with weak institutional development and tends to be positive in those with strong institutional development. Based on these findings, policymakers should focus on improving institutional quality to facilitate both innovation and dividend distribution, thereby supporting sustainable corporate growth and shareholder returns. This third essay examines the institutional factors influencing dividend smoothing in African firms. The study finds that African firms exhibit a speed of adjustment (SOA) of 0.539, indicating a moderate level of dividend smoothing, and a target payout ratio of 0.484, suggesting they pay out a high percentage of their earnings as dividends. The research highlights that firms operating in environments with low economic growth, civil law regimes, weak investor protection, weak property rights, low press freedom, underdeveloped financial institutions and markets, high corruption, weak government effectiveness, weak political stability, weak regulatory quality, and weak rule of law tend to engage in increased dividend smoothing. To address this, policymakers and business leaders in African emerging markets should prioritize improving governance and institutional quality. This can mitigate agency costs and information asymmetry, reducing the need for dividend smoothing. Strengthening investor protection, property rights, press freedom, financial markets, and governance standards will create a more stable investment climate. In conclusion, this research underscores the importance of institutional improvements in shaping dividend policies in African non-financial firms

Keywords: *Dividend policy, investor protection, property rights, corruption, press freedom, financial development, innovation, institutional development, dividend smoothing, speed of adjustment, government effectiveness, political stability, regulatory quality, rule of law, economic growth, civil law.*

Declaration

I, **Margret Tembo**, declare that this research paper is my work and that I have correctly acknowledged the work of others. It is submitted to fulfil the requirements for the Doctor of Philosophy degree in Finance at the University of the Witwatersrand, Johannesburg. I declare that this research paper has not been submitted for any other degree or examination in this or any other institution.

Margret Tembo

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Dedication

This thesis is dedicated to the loving memory of my late mother, Bernadette Tembo. Mum, you always inspired me to strive for greatness and never be complacent with my achievements. You foresaw my potential and encouraged me to pursue it relentlessly. Your unwavering belief in me and your persistent push for excellence have been the driving forces behind my journey. Many times, I felt like giving up, but your words gave me the strength to persevere. Though you are no longer with us, your spirit and teachings continue to inspire and guide me every day. This work is a tribute to your legacy and the profound impact you have had on my life. Thank you, Mum, for believing in me and for your boundless love and support. This is for you.

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Definition of abbreviations, terms and symbols

AR	Autocorrelation
BRICS	Brazil Russia India China South Africa
CCI	Control of Corruption Index
CEE	Central and Eastern Europe
CEO	Chief executive officer
CPI	Corruption Perception Index
DIRLIA	Director Liability Index
DISIND	Disclosure Index
DIVASSETS	Dividends to assets
DIVSALES	Dividends to sales
DPS	Dividends per share
DPR	Dividend payout ratio
EFW	Economic freedom of the world
ENDOG	Endogenous
EPS	Earnings per share
ESG	Environmental, social, and governance
ETA	Earnings to total assets
EU	European Union
EXOG	Exogenous
FDI	Foreign direct investment
FE	Fixed effects
FIA	Financial institutions access
FID	Financial institutions depth
FIE	Financial institutions efficiency
FII	Financial Institutions Index
FMA	Financial markets access
FMD	Financial markets depth

FME	Financial markets efficiency
FMI	Financial markets index
GDP	Gross domestic product
GFC	Global financial crisis
GFCD	Global financial crisis dummy
GGDP	Growth in Gross Domestic Product
GMM	Generalised method of moments
GOVEFF	Government effectiveness
ICT	Information and communications technology
IPR	Intellectual property rights
IMF	International Monetary Fund
INNOV	Innovation
ICRG	International Country Risk Guide
IOSR	International Organisation of Scientific Research
INVPRO	Investor protection
IPO	Initial public offering
ISE	Istanbul Stock Exchange
IV	Instrument variables
LNGDPC	Log of GDP per capita
MENA	Middle East and North Africa
MM	Miller and Modigliani
NO.	Number
NPV	Net Present Value
OBS	Observations
OECD	Organisation for Economic Cooperation and Development
OLS	Ordinary least squares
%	Percentage
PF	Press freedom
POLITSTAB	Political stability

PR	Property rights
RE	Random effects
REGQUA	Regulatory quality
R&D	Research and development
ROA	Return on assets
RULLAW	Rule of law
SEO	Seasonal equity offerings
SHIND	Shareholder Suits Index
SOA	Speed of adjustment
TPR	Target payout ratio
2SLS	Two-stage least squares
UAE	United Arab Emirates
USD	United States Dollar
U. S	United States
UK	United Kingdom
USA	United States of America
VIF	Variance Inflation Factor
VOICEACC	Voice and accountability
WDI	World development indicators
WIPO	World Intellectual Property Organization

CHAPTER ONE: Introduction

1.1 Background to the thesis

The means of returning money to firm shareholders has always been and continues to be, a contentious issue (Benavides, Berggrun & Perafan, 2016). The process of distributing wealth back to shareholders is commonly known as the payout policy, which can manifest as either share repurchases or dividends (Samet & Jarboui, 2017). Among these options, dividend payments appear to be the oldest and most prevalent payout method for many firms globally. However, in certain markets, such as the USA and UK, share repurchases have gained prominence and have, in some cases, replaced dividends (See, Grullon and Michaely, 2002; Von Eije and Megginson, 2008).

In the context of African markets, dividend payments stand out as the primary means by which companies on the continent distribute profits to their shareholders (Arko et al., 2014), with share repurchases being uncommon (Hamouda, 2018). Moreover, the rarity of share repurchases in African markets, coupled with limited data availability due to legal restrictions (Wesson et al., 2018), underscores the prevailing focus on dividend policy. Nevertheless, share repurchases seem to be gaining popularity as a payout method in two African markets, specifically the Egyptian market (formally allowed in 1992) and the South African market (formally allowed in July 1999).

Dividend policy, as defined by Lease et al. (2000, p. 29), refers to "...the practice that management follows in making dividend payout decisions, that is, the size and pattern of cash distributions over time to shareholders." It is a critical aspect of corporate finance, closely intertwined with other key decisions such as investment and financing (Jabbouri, 2016). When a firm decides to distribute dividends, it reduces the funds available for investment, thereby requiring the exploration of alternative sources of finance for future investments. Consequently, dividend policy serves as a central axis influencing various financial strategies (Alli et al., 1993).

The significance of dividend policy extends beyond the company itself, impacting various stakeholders, such as investors, managers, lenders, regulatory bodies, and the government (Kaźmierska-Jóźwiak, 2015). Therefore, investors closely scrutinize a firm's dividend policy, as it provides insight into its financial health and future growth prospects. Furthermore, managers are equally concerned about dividend policy, as it can significantly influence overall financial performance and shape investor perceptions. Additionally, lenders pay attention to dividend policy as it signals the company's financial stability and the

availability of funds for debt repayment. Moreover, regulatory bodies are interested in dividend policy due to its potential impact on firm stability and solvency. Lastly, the government may also take an interest in a firm's dividend policy to protect shareholder interests and safeguard the broader economy against exploitation.

Concerning the history of dividend policy, researchers suggest that its roots trace back to the inception of the modern corporation (See Al-Malkawi, Rafferty, and Pillai, 2010; Frankfurter and Wood, 1997; Nuhu, 2014). Thus, dividend policy has garnered attention from managers and scholars in the academic community since the advent of modern commercial corporations (Nuhu, 2014). However, some authors argue that its origins date as far back as the sixteenth century. For example, Al-Malkawi et al., (2010) assert that corporate dividends have a history reaching at least to the early sixteenth century in Holland and Great Britain, where captains of sixteenth-century sailing ships began selling financial claims to investors. These captains were entitled to a share in the proceeds, if any, of the voyages, and at the end of each journey, profits and capital were distributed to investors. By the close of the sixteenth century, these financial claims started being traded on open markets in Amsterdam and were gradually replaced by shares of ownership. This historical evolution underscores how dividend policy has been intertwined with the development of capital markets and corporate governance over centuries, reflecting its enduring importance in shaping corporate financial strategies and investor relations.

The first empirical study on dividend policy was conducted by Lintner (1956), who surveyed US Chief Finance Officers to gain insight into how they formulated their dividend policies. Lintner (1956) revealed several stylized facts that culminated in a standard model of dividend payout: (i) firms establish long-term target dividend payout ratios; (ii) managers pay more attention to dividend changes than absolute levels; (iii) dividend changes align with shifts in the long-run sustainable levels of earnings rather than short-term changes, and (iv) managers exhibit reluctance to make dividend changes that might need to be reversed. Lintner's study provided foundational insights into how corporate dividend policies are shaped by managerial perceptions and strategic goals. It highlighted that firms often adopt conservative dividend policies to maintain smooth or stable payout ratios over time, thereby signaling financial health and reliability to investors. Moreover, Lintner's findings underscored the strategic role of dividends in balancing shareholder expectations with long-term capital needs. These insights have influenced subsequent research and theoretical developments in dividend policy, shaping discussions on the optimal balance between dividends and retained earnings in corporate finance.

A significant development in dividend theory occurred with Miller and Modigliani's (1961), commonly known as M&M, introduction of the dividend irrelevance theory. M&M proposed that under perfect capital market conditions without taxation, transaction costs, agency conflicts, information asymmetry, or institutional constraints investment policy rather than dividend policy influences the value of firms. This theory challenged traditional views by suggesting that in such idealized markets, investors are indifferent between receiving dividends or capital gains, as they can create their own desired income streams through portfolio choices. However, the practical relevance of M&M's theory has been extensively debated. Researchers in finance questioned its applicability in real-world scenarios where market imperfections and investor preferences for steady income streams often lead firms to maintain dividend payouts. They argued that dividends serve multiple purposes beyond wealth distribution, including signaling management's confidence in future earnings and attracting certain types of investors who rely on dividend income. Thus, while M&M's dividend irrelevance theory provided a provocative theoretical framework, it prompted further exploration into the complexities and motivations underlying corporate dividend decisions in diverse market conditions.

Following the publication of Modigliani and Miller's (M&M) irrelevance theory, researchers shifted their focus to determining the conditions under which dividends become relevant. This shift led to the relaxation of M&M assumptions and the development of various theoretical models attempting to explain observed dividend policies worldwide. These theories include signaling theory (Bhattacharya, 1979; John and Williams, 1985), agency theory (Easterbrook, 1984; Jensen, 1986), free cash flow theory (Jensen, 1986), and life cycle theories (DeAngelo, DeAngelo & Stulz, 2006). Each theory presents conflicting predictions about how dividend policy is determined, contributing to the ongoing controversy. Black (1976) encapsulates these conflicting roles in the "dividend puzzle," highlighting that the more scrutiny applied to the dividend picture, the more it appears as a puzzle, with pieces that do not fit together. Black questions why firms pay dividends and why investors are concerned with them if they are indeed irrelevant or tax-disadvantaged. Therefore, since Black's seminal work, dividend policy has remained a primary puzzle in corporate finance, with Al-Malkawi et al., (2010) suggesting that the statement of the Black dividend puzzle may still be valid. Despite substantial research efforts, the dividend puzzle remains unsolved (Benlemlih, 2019) and continues to perplex academia (Adjaoud & Hermassi, 2017; Baker & Weigand, 2015).

While numerous attempts have been made to unravel the dividend policy puzzle, the question of what determines dividend policy remains unresolved and controversial (Al-Malkawi et al., 2010; Booth & Zhou, 2017). Despite over two decades of continuous research, dividend policy continues to be recognized as one of the top ten crucial unresolved issues in the realm of finance, lacking consensus (Maladjian & Khoury, 2014). Previous research highlights the significance of institutional factors in explaining dividend policies across various global contexts (Almaskati et al., 2020; Aivazian et al., 2003; Booth et al., 2001; Doidge, Karolyi, and Stulz, 2007; Goyal and Muckley, 2013; Gonzalez et al., 2017; Javakhadze et al., 2013; Jeong, 2013; La Porta et al., 2000; Yensu & Adusei, 2016). For instance, Booth and Zhou (2017) demonstrate that institutional structure, encompassing a country's financial system, institutions, culture, and industrial organization, plays a crucial role in determining dividend policy. Similarly, Jeong (2013) underscores the critical influence of institutional factors on understanding dividend behavior in emerging markets. Consequently, institutional factors emerge as likely determinants of a firm's dividend policy.

However, both theoretical and empirical research have yielded mixed conclusions regarding the effect of institutional factors on dividend policy. Moreover, existing research primarily focuses on the impact of investor protection (Agrawal, 2013; Alzahrani and Lasfer, 2012; Athari et al., 2016; Fairchild et al., 2014; Goyal and Muckley, 2013; Herron, 2018; Renneboog and Szilagyi, 2020) and corruption (Yensu and Adusei, 2016), neglecting other critical institutional factors such as press freedom, property rights, and financial development, especially within the unique context of African markets. Therefore, Chang, Chang, and Dutta (2019) and Hoang and Hoxha (2019) advocate for investigating corporate financial decisions not in isolation but in conjunction with cultural, social, and legal factors. Furthermore, there is limited exploration into the effect of institutional factors on the dividend policy of African-listed firms. Aligning with literature in finance and law, we argue that investor protection, property rights, press freedom, corruption, and financial development are all likely determinants of dividend policy in African contexts, warranting further empirical investigation.

Turning our attention to the realm of innovation, an area that has recently gained increased attention, both innovation and dividend policy emerge as pivotal dimensions significantly shaping the strategic decisions of businesses globally, including those in African markets. While remaining distinct, these dimensions constitute interconnected facets of corporate management, each with its unique objectives, implications, and trade-offs. Over the last decade, investments in innovation have surged, becoming a key driver of long-term economic growth (Yang et al., 2020). The interplay between innovation and dividend policy

has sparked extensive research and debate within the realms of corporate finance and management. Understanding how dividend policy aligns with innovation activities holds paramount importance for academic researchers and policymakers, particularly in dynamic markets like those in Africa (Yang et al., 2020). Moreover, the relationship between innovation and dividend policy is intricate and multifaceted, displaying variations across industries, regions, and economic conditions. Consequently, firms often grapple with the challenge of allocating limited resources between innovative endeavors promising future growth and dividend payments meeting the expectations of current shareholders. Striking the right balance between these competing priorities is pivotal, directly influencing a firm's competitiveness, valuation, and adaptability to changing market dynamics (Hasan et al., 2022; Yang et al., 2020).

The complexity of the relationship between innovation and dividend policy is evident from conflicting findings in the literature, suggesting that this dynamic may vary from one country to another and across different stages of economic development. Some studies (e.g., Lahiri & Chakraborty, 2014; Yang et al., 2020) point to a positive influence of innovation on dividend policy, aligning with theories such as simultaneous dividend theory and reputation theory. Conversely, other research (e.g., Boumosleh and Cline, 2015; Fama and French, 2001; Gugler, 2003; Lee and Lee, 2019; Hasan et al., 2022) suggests a negative relationship, supporting theories like pecking order and residual theories. Understanding these dynamics is crucial for developing nuanced strategies that enhance both innovation capabilities and shareholder value in diverse economic contexts, including the evolving markets of Africa.

Recent empirical studies (Hasan et al., 2022) underscore the nuanced role of institutional factors in shaping the innovation-dividend policy nexus. The authors demonstrate that investor protection and governance moderate the relationship between innovation and dividend policy, emphasizing the critical influence of institutional contexts on firms' strategic decisions. However, research on the role of institutions in this relationship remains limited, especially in emerging markets (Yang et al., 2020). Furthermore, the traditional negative association between investments in innovation and dividend payments may not universally apply (Hasan et al., 2022), prompting inquiries into the moderating factors influencing this dynamic. One unexplored area is whether the strength of the relationship between innovation and dividends varies with the quality of institutional development. Additionally, there is a dearth of literature examining how specific institutional factors such as financial market development, rule of law, control of corruption, and government effectiveness shape the innovation-dividend relationship. Therefore, identifying which institutional factors moderate this relationship remains a key research gap.

Despite these unresolved issues, Lintner (1956) notes that firms establish long-term target payout ratios, making gradual adjustments toward these targets each year. While evidence supports the phenomenon of dividend smoothing, particularly in developing countries characterized by low speed of adjustment (SOA), such evidence is sparse in emerging markets. Dividend smoothing, a critical yet underexplored aspect of dividend policy (Syed et al., 2018), remains puzzling in terms of its determinants. Theoretical literature suggests that firms facing agency costs and information asymmetry tend to engage in more smoothing; however, empirical findings often challenge these theories, leaving researchers perplexed about the dividend smoothing behavior of firms that may not prioritize signaling or mitigating agency conflicts (Guttman et al., 2010).

Despite advancements in theoretical research, empirical studies examining cross-sectional variations in dividend smoothing behavior are both limited and inconclusive (Lambrecht & Myers, 2012; Syed et al., 2018). Evidence from emerging markets suggests that firms in these regions tend to exhibit higher adjustment speeds, resulting in lower levels of smoothing and less stable dividend policies compared to their counterparts in developed countries (Al-Najjar and Kilincarslan, 2017). This observation raises questions about the factors influencing the speed of adjustment towards target payout ratios and the determinants of dividend smoothing across different countries. In exploring these dynamics, institutional differences emerge as potential explanatory factors. While institutional factors have been extensively studied with capital structure, cash holdings, and peer influence, few studies have specifically investigated their impact on the speed of adjustment (SOA) toward target dividend payouts (Javakhadze et al., 2014; Jeong, 2013; Nowak et al., 2020). This study aims to address this gap by examining how institutional factors influence SOA towards target dividend payout or dividend smoothing in the African context.

Moreover, despite existing research on dividend smoothing in developed and other emerging markets, there is a noticeable scarcity of studies that consider country-level attributes of dividend smoothing (Nowak et al., 2020). Furthermore, Tran et al., (2022) highlight the limited research on macro factors influencing dividend smoothing at the firm level, emphasizing the need for further exploration in this area. Specifically, no study to date has investigated how institutional factors influence the speed of adjustment towards target dividends or dividend smoothing in African-listed firms. Given the distinct economic and institutional environments of African markets, including variations in investor protection,

financial development, regulatory quality, legal enforcement, and ownership structure, insights from developed and other emerging markets may not directly apply.

In conclusion, this study aims to contribute new insights into the institutional determinants of dividend policy by focusing on African-listed firms. By examining the unique economic and institutional context of African markets, this research seeks to enhance the understanding of dividend policy determinants in emerging markets. This focus is crucial for providing a comprehensive view that can inform both academic research and practical policymaking in the context of African emerging markets.

1.2 Motivation of the thesis

The motivation for this study on the institutional determinants of dividend policy in African listed firms arises from the persistent complexities and unresolved debates within corporate finance surrounding dividend policies (Shapiro & Zhuang, 2015; Al-Malkawi et al., 2010; Booth & Zhou, 2017). Despite decades of scholarly attention, dividends continue to present enigmatic puzzles marked by conflicting findings and theoretical disparities (Lambrecht & Myers, 2012; Syed et al., 2018). This enduring uncertainty underscores the imperative to delve deeper into the factors influencing dividend policy, particularly in diverse institutional contexts. Institutional factors have emerged as pivotal elements shaping dividend policy, as evidenced by previous research (Boțoc and Pirtea, 2014; Goyal and Muckley, 2013; Javakhadze et al., 2014; Jeong, 2012; La Porta et al., 2000; Moortgat, Annaert, and Deloof, 2017). However, there remains a lack of consensus on the specific institutional drivers impacting dividend decisions, necessitating further exploration to reconcile existing controversies and clarify theoretical frameworks. The extension of this motivation to the study of African emerging markets is driven by the limited depth of research in these regions, marked by their unique socio-economic landscapes (Al-Najjar & Kilincarslan, 2018; Bekaert and Harvey, 2000). By extending this investigation to African emerging markets, this study aims to fill critical gaps in understanding the factors influencing dividend policies in these contexts. The unique characteristics of African markets and their distinct institutional environments highlight the need for tailored insights that go beyond findings from developed or other emerging markets, ensuring relevance and applicability to the African context.

The motivation for conducting a comprehensive analysis of institutional determinants shaping dividend policy in African firms, focusing on investor protection, press freedom, property rights, corruption, and financial development, stems from the persistent complexities and unresolved debates surrounding dividend policies within corporate finance. Despite

significant scholarly attention, dividends continue to present enigmatic puzzles marked by conflicting findings and theoretical disparities (Lambrecht & Myers, 2012; Syed et al., 2018). This study aims to address these longstanding uncertainties by investigating whether variations in dividend policy can be clarified through institutional factors. By doing so, it seeks to reconcile existing controversies and provide clarity to theoretical frameworks. Extending this investigation to African emerging markets is crucial due to the limited depth of research in these regions and their distinctive socio-economic landscapes (Al-Najjar & Kilincarslan, 2018; Bekaert and Harvey, 2000). Findings derived from studies conducted in developed and other emerging markets may not adequately capture the complexities of African contexts, necessitating a focused inquiry specific to African-listed firms. By filling these gaps, this research endeavors to offer critical insights into corporate finance and institutional influences on dividend policies, tailored to the nuanced dynamics of the African economic environment. Existing literature predominantly emphasizes investor protection (e.g., Agrawal, 2013; Alzahrani and Lasfer, 2012; Athari et al., 2016; Fairchild et al., 2014; Goyal and Muckley, 2013; Herron, 2018; Renneboog and Szilagyi, 2020) and corruption (Yensu and Adusei, 2016) while overlooking other equally pivotal institutional factors such as press freedom, property rights, and financial development (Athari et al., 2016; Yensu and Adusei, 2016). Moreover, most dividend policy studies have centered on developed markets, posing challenges when applying models designed for these environments to emerging economies (Ranti, 2013). The varying sensitivity of dividend decisions to financial determinants across different countries underscores the necessity for a comprehensive examination of institutional factors beyond the scope of developed markets (Aivazian et al., 2003). Furthermore, studies on institutional factors exhibit a disproportionate focus on developed regions, with inadequate attention paid to Africa specifically (Boţoc and Pirtea, 2014; Javakhadze et al., 2014; Jeong, 2012; La Porta et al., 2000; Moortgat, Annaert, and Deloof, 2017). Most dividend policy research in Africa has traditionally centered on firm-specific factors, neglecting potential influences from broader institutional contexts. However, insights from studies focusing on investor protection in Islamic banks in North Africa (Athari et al., 2016) and corruption in African firms (Athari et al., 2016) suggest that these institutional factors may significantly shape dividend policy outcomes. Therefore, by conducting a comprehensive analysis encompassing institutional determinants such as investor protection, press freedom, property rights, financial development, and corruption, this study aims to address critical gaps in understanding dividend policies within African firms. The research endeavors not only to advance academic knowledge but also to provide actionable insights for policymakers, tailored to the unique challenges and

opportunities presented by African emerging markets. Ultimately, this study seeks to contribute significantly to the discourse on corporate finance in Africa, offering practical implications for enhancing corporate governance and economic development across the continent.

The motivation for this study on innovation, dividend policy, and institutional development is grounded in the pivotal role of innovation in driving sustained economic growth, as highlighted by recent research (Yang et al., 2020). Innovation not only enhances firms' competitive edge but also fosters economic resilience and long-term profitability (Boumosleh and Cline, 2015; Gugler, 2003). In corporate finance literature, the relationship between innovation and dividend policy remains contentious, with studies suggesting that firms investing in innovation may prioritize future growth over immediate dividend payouts (Fama and French, 2001; Lee and Lee, 2019), while others argue that innovation can lead to increased profitability and higher dividends (Lahiri and Chakraborty, 2014; Yang et al., 2020). Despite extensive research in developed markets like the United States and Europe, the relevance of these insights to emerging markets, particularly in Africa, is uncertain due to distinct institutional contexts and economic landscapes. This study addresses this gap by exploring how institutional development moderates the relationship between innovation and dividend policy among African listed firms. Inspired by Hasan et al., (2022) study on BRICS countries, which utilized R&D expenditures, this research focuses on African firms, using patent applications as an innovation proxy. Drawing from Hasan et al.,(2022) approach, which employed investor protection and judicial independence as institutional quality proxies, this study broadens its scope to include investor protection, financial market development, rule of law, governance effectiveness, and control of corruption. This comprehensive framework addresses the scarcity of empirical studies on African-listed firms, offering insights into how diverse institutional environments influence financial strategies, including dividend decisions (Athari et al., 2016; Yensu and Adusei, 2016).

Given the varied economic and institutional landscapes across African nations, this study aims to provide a nuanced understanding of how innovation interacts with institutional factors to shape dividend policies. Through an examination of patent applications and various institutional dimensions, it seeks to bridge theoretical gaps, reconcile conflicting empirical evidence, and offer practical insights for stakeholders navigating the dynamic economic contexts of African economies. Ultimately, this research endeavors to enrich the corporate finance literature by illuminating the intricate interplay between innovation, institutional development, and dividend policy within African contexts.

The motivation for investigating the institutional determinants of dividend smoothing among African-listed firms stems from the critical yet underexplored nature of this facet within dividend policy (Syed et al., 2018). Dividend smoothing, characterized by gradual adjustments toward long-term target payout ratios, poses significant challenges, especially in emerging markets like those in Africa. Lintner's foundational work in 1956 laid the groundwork by demonstrating how US firms use slow adjustment speeds (SOA) to align dividends with targets. However, questions persist regarding the diverse speeds of adjustment and the underlying factors influencing this behavior (Leary & Michaely, 2011). Theoretical advancements suggest agency costs and information asymmetry as potential determinants of dividend smoothing (Guttman et al., 2010; Leary and Michaely, 2011). Despite this, empirical evidence on cross-sectional variations in dividend smoothing remains inconclusive, highlighting significant discrepancies between developed and emerging markets. For instance, developed markets exhibit lower SOAs compared to their emerging counterparts (Fama and Babiak, 1968; Chemmanur et al., 2010; Bremberger et al., 2016; Wolmarans, 2003; Al Malkawi et al., 2014; Al-Yahyaee et al., 2010; Al-Ajmi and Abo Hussain, 2011). These variations necessitate an exploration of institutional factors that contribute to such discrepancies, underscoring the need for a comprehensive understanding of dividend smoothing motivations across different market contexts.

The institutional environment has been recognized in previous research as pivotal in shaping firms' financial policies (Oztekin & Flannery, 2011; Orlova & Sun, 2018). Investigating how these factors influence dividend smoothing in the unique context of African markets, with their diverse financial market development, information disclosure practices, and challenges related to investor protection and corporate governance, is essential (D'Agostino, Dunne, and Pieroni, 2016; Abor and Fiador, 2013). Additionally, including macroeconomic factors such as political stability, economic conditions, and GDP growth rates is crucial for understanding dividend policy decisions within Africa (Berman & Balde, 2013; Jeong, 2013). This contextual specificity underscores the importance of exploring institutional determinants in African markets, with implications that extend to policymakers, regulators, market participants, and interventions aimed at enhancing institutional quality. In summary, this study aims to fill gaps in understanding dividend smoothing behaviors among African-listed firms by examining the influence of institutional factors. By shedding light on these dynamics, the research seeks to provide valuable insights for both academic discourse and practical applications in enhancing corporate governance and economic stability in Africa

Therefore, by conducting a comprehensive analysis of institutional determinants of dividend policy of African listed firms, this study aims to address critical gaps in understanding dividend policies within African firms. The research endeavors not only to advance academic knowledge but also to provide actionable insights for policymakers, tailored to the unique challenges and opportunities presented by African emerging markets. Ultimately, this study seeks to contribute significantly to the discourse on corporate finance in Africa, offering practical implications for enhancing corporate governance and economic development across the continent.

1.3 Research problem

The overarching research problem of this thesis is to address the gap in understanding the institutional determinants of dividend policy among African-listed firms. Existing research has predominantly focused on the effects of investor protection (Agrawal, 2013; Alzahrani and Lasfer, 2012; Athari et al., 2016; Fairchild et al., 2014; Goyal and Muckley, 2013; Herron, 2018; Renneboog and Szilagyi, 2020) and corruption (Yensu and Adusei, 2016) while neglecting other critical institutional factors such as press freedom, property rights, and financial development. Despite extensive studies, no consensus has emerged on the determinants of dividend policy (Al-Malkawi et al., 2015), with significant disparities in corporate payout patterns observed between countries, particularly in developed versus emerging capital markets (Glen et al., 1995). The influential role of the institutional environment in shaping dividend policy is emphasized by Booth and Zhou (2017) and Al-Najjar and Kilincarslan (2017). However, there is limited research on how institutional factors affect the dividend policy of African-listed firms. This study aims to fill this research gap by doing a comprehensive analysis of institutional determinants of dividends policy focusing on how investor protection, property rights, press freedom, corruption, and financial development in Africa thereby contributing to the understanding of dividend policy behaviors in diverse market environments and elucidating the role of institutional factors in shaping firms' dividend policy decisions

1.3.1 Research problem for the study on how investor protection, press freedom, property rights, financial development, and corruption shape dividend policy in African firms

Extant research on institutional factors influencing dividend policy has primarily focused on investor protection (e.g., Agrawal, 2013; Alzahrani and Lasfer, 2012; Athari et al., 2016; Fairchild et al., 2014; Goyal and Muckley, 2013; Herron, 2018; Renneboog and Szilagyi, 2020) and corruption (Yensu and Adusei, 2016), while overlooking equally significant factors such as press freedom, property rights, and financial development. This omission highlights the need for a comprehensive exploration of corporate financial decisions that consider diverse cultural, social, and legal contexts ((Booth & Zhou 2017; Al-Najjar & Kilincarslan, 2017). Moreover, existing corporate finance models, predominantly developed within the framework of developed countries, exhibit biases when applied to emerging economies (Jabbouri, 2016). The observed variations in dividend policy decisions between developed and developing markets underscore the necessity for context-specific studies (Ranti, 2013). Despite substantial scholarly attention, consensus on the determinants of dividend policy remains elusive (Al-Malkawi et al., 2015). Notably, significant disparities in corporate payout patterns across countries, particularly between developed and emerging capital markets, have been well-documented (Glen et al., 1995). The influential role of the institutional environment in shaping dividend policy outcomes is underscored by Booth and Zhou (2017) and Al-Najjar and Kilincarslan (2017). However, there exists a notable gap in the literature regarding how institutional factors specifically impact the dividend policies of African-listed firms. This study aims to address this gap by investigating how institutional factors such as investor protection, press freedom, property rights, financial development, and corruption shape dividend policy in African firms. By conducting a comprehensive analysis, this research seeks to enhance the understanding of dividend policy behaviours in diverse market environments and elucidate the nuanced role of institutional factors in shaping firms' decisions regarding dividend payouts. Ultimately, this study aims to contribute valuable insights that can inform both academic discourse and practical considerations related to corporate finance in African markets

1.3.2 Research problem for the study on innovation, dividend policy, and institutional development.

In the dynamic landscape of corporate management, the intersection of innovation and dividend policy has emerged as a pivotal dimension significantly shaping businesses' strategic decisions globally. Over the past decade, the surge in innovation investments has underscored innovation's role as a primary driver of long-term economic growth (Yang et al., 2020). Concurrently, the interplay between innovation and dividend policy has become a focal point in corporate finance and management research, characterized by conflicting findings across countries and industries. Some studies, such as those by Lahiri & Chakraborty (2014) and Yang et al. (2020) suggest a positive influence of innovation on dividend policy, while others, including Boumosleh and Cline (2015), Fama and French (2001), Gugler (2003), Lee and Lee (2019), and Hasan et al. (2022), point to a negative relationship, highlighting the need for further exploration. Recent empirical research has emphasized the nuanced role of institutional factors in shaping the innovation-dividend policy relationship, particularly in BRICS countries (Hasan et al., 2022). However, the exploration of institutions' role in this relationship, especially in emerging markets, remains limited, highlighting a critical gap in the literature (Yang et al., 2020). Additionally, the conventional negative relationship between innovation and dividend payments may not hold universally, prompting questions about the moderating factors influencing these dynamic markets (Hasan et al., 2022). One unexplored area is understanding how the strength of the relationship between innovation and dividends varies with the level of institutional development and how various institutional quality factors impact this relationship. This study aims to address these gaps by examining the interaction between innovation, dividend policy, and institutional quality, focusing on African-listed firms. Utilizing patent applications at the country level as a measure of innovation and a comprehensive set of institutional quality measures, this research seeks to elucidate the nuanced dynamics of this relationship in the African context. By doing so, it aims to contribute to both academic understanding and practical implications for corporate decision-making and policy formulation.

1.3.3 Research problem for the study on institutional determinants of dividend smoothing

The current ambiguity regarding the causes of dividend smoothing leaves researchers perplexed about why firms with seemingly lesser need for signalling or mitigating agency conflicts opt for smoother dividend payments (DeMarzo & Sannikov, 2008; Guttman et al., 2010; Syed et al., 2018). Despite theoretical advancements, empirical studies on cross-sectional variations in dividend smoothing behaviour remain limited and inconclusive (Syed et al., 2018). While some studies have examined firm-level determinants, there is a scarcity of research considering country-level attributes of dividend smoothing (Nowak et al., 2020). Moreover, the influence of institutional factors on dividend smoothing, particularly among African-listed firms, remains underexplored. Existing literature highlights the need for further exploration into how macro factors, including institutional differences, influence dividend smoothing behaviour (Tran et al., 2022). Dividend smoothing, a fundamental yet relatively underexplored aspect of dividend policy, is particularly puzzling in emerging markets. Institutional factors such as legal frameworks, governance quality, political stability, and economic development could play significant roles in shaping these behaviours, yet their impacts are not well understood. Therefore, this study seeks to fill these gaps by investigating the institutional determinants of dividend smoothing among African-listed firms. It aims to identify the factors influencing the speed of adjustment toward target dividend payout ratios, examining how various institutional qualities such as legal protections, regulatory environments, and market maturity affect these decisions. By shedding light on the role of institutional factors in shaping firms' dividend smoothing patterns, this research seeks to contribute to a deeper understanding of dividend smoothing behaviours in diverse market environments, providing both academic insights and practical implications for policymakers and corporate managers.

1.4 Objectives of the thesis

The general objective of this study is to investigate the institutional determinants of dividend policy among African listed firms. This research aims to understand how various institutional factors such as investor protection, press freedom, property rights, financial development, and governance factors influence the dividend policies of firms in the African context. By doing so, the study seeks to provide a comprehensive analysis of the role these institutional elements play in shaping corporate financial decisions in emerging markets, particularly within the diverse and unique socio-economic landscapes of Africa.

1.4.1 Objective of the study on how investor protection, press freedom, property rights, financial development, and corruption shape dividend policy in African firms

The primary goal of the first study is to offer a nuanced comprehension of how specific institutional components, such as investor protection, property rights, press freedom, corruption, and financial development, impact the dividend policy decisions of companies operating in Africa. The study aims to meticulously identify the magnitude and direction of influence exerted by each institutional factor on the dividend decisions of African-listed firms. In particular, it aims to investigate how investor protection, property rights, press freedom, corruption, and financial development collectively shape the dividend policy of African-listed firms. To achieve this objective, the research will employ a comprehensive empirical approach, analysing extensive datasets spanning 13 African countries over a substantial timeframe from 2006 to 2020. This objective is to make a meaningful contribution to a deeper understanding of the pivotal role played by institutional factors in shaping dividend policies. The findings are anticipated to inform corporate decision-making, influence regulatory frameworks, and contribute to academic discourse within the unique context of African business environments.

1.4.2 Objective of the study on innovation, dividend policy, and institutional development

The second study is dedicated to investigating two primary objectives related to innovation, dividend policy, and institutional development within African economies. Firstly, it aims to comprehensively explore the intricate relationship between innovation and dividend policy. Secondly, the thesis endeavours to examine the impact of institutional factors on the complex interplay between innovation and dividend policy. The study seeks to evaluate how varying levels of institutional development, including aspects such as investor protection, financial market development, governmental effectiveness, the strength of the rule of law, and the prevalence of corruption, influence the observed relationship. Through meticulous examination, the research aims to demonstrate how these institutional elements modulate the strength and significance of the innovation-dividend policy nexus within the African context. By addressing these objectives, the thesis strives to make significant contributions to existing literature by providing nuanced insights into the financial decision-making processes of African firms. Additionally, it aims to underscore the pivotal role played by institutional factors in shaping corporate strategies related to innovation and dividend policy. Through a detailed examination of these dynamics, the research ultimately seeks to inform policymakers, corporate leaders, and researchers about the implications of institutional development on financial decisions within African economies.

1.4.3 Objective of the study of institutional determinants of dividend smoothing.

The objective of the third study is to comprehensively investigate the institutional determinants of dividend smoothing in African-listed firms spanning from 2006 to 2020, addressing a significant gap in the existing literature. The study aims to understand how various institutional factors, including investor protection, property rights, corruption control, press freedom, financial development, rule of law, government effectiveness, legal systems, regulatory quality, political stability, and economic growth, influence dividend smoothing or the speed of adjustment (SOA) toward target dividends. By focusing on the African context – as distinct from that of other emerging markets – the research seeks to uncover potential variations in the impact of institutional factors on dividend smoothing policies. Furthermore, the study aims to provide actionable insights for stakeholders such as managers, policymakers, regulators, and academic researchers, emphasising the practical implications of institutional dynamics in shaping dividend smoothing practices. Ultimately, this thesis aims to guide future research endeavours in emerging markets, particularly within Africa, by offering a comprehensive understanding of the institutional determinants of dividend smoothing and their implications for financial management and governance.

1.5 Significance of the thesis

This study contributes to the existing literature by conducting a comprehensive examination of the impact of institutional factors on dividend policies in these firms. The significance of the study can be delineated into three key aspects. Firstly, it delves into how investor protection, press freedom, property rights, financial development, and corruption shape dividend policy in African firms. Secondly, it explores the nexus between innovation, dividend policy, and institutional development. The final segment focuses on the institutional determinants of dividend smoothing. In each of these studies, the research emphasizes the relevance for policymakers, academia, and corporate finance practitioners.

1.5.1 Significance of the study on how investor protection, press freedom, property rights, financial development, and corruption shape dividend policy in African firms

A study on how investor protection, press freedom, property rights, financial development, and corruption shape dividend policy in African firms holds significance.

- Significance to academia

  This research enhances the theoretical landscape of corporate finance by providing insight into how unique institutional factors influence dividend decisions within the African context. By shedding light on these dynamics, academics can refine existing models and construct new frameworks to advance the field. Moreover, the empirical findings challenge and expand upon current theories, offering valuable perspectives on the interplay between investor protection, financial development, and press freedom in shaping dividend policies among African-listed firms. These empirical results serve as a foundation for further research and hypothesis testing by scholars. The inclusion of a longitudinal analysis spanning from 2006 to 2020 presents a distinctive opportunity for academics to examine the evolution of institutional determinants and dividend policies over time. This extended timeframe facilitates a comprehensive understanding of the dynamic relationships within the African context. Additionally, adopting a multi-country perspective and studying 357 non-financial listed firms across thirteen African stock markets yields a rich dataset, enabling thorough exploration. In this study, alternative proxies are employed; for instance, the World Bank Control of Corruption Index is utilised to measure corruption instead of the Transparency International Control of Corruption Index commonly used in dividend research. Similarly, the study adopts a new measure of financial development devised by Svirydzenka (2016). These methodological choices offer avenues for academics to investigate variations in dividend policies across different countries and markets, thereby contributing to a nuanced understanding of regional and institutional influences.

- Significance to policymakers:

  For policymakers, the exploration of institutional determinants of dividend policy in Africa provides practical insight and recommendations crucial for cultivating an environment conducive to both investment and economic growth. The empirical findings, particularly the identified negative impact of investor protection on dividend policy, offer policymakers guidance in striking a balance between safeguarding investors and fostering favourable dividend policies among firms. It underscores the importance of clear, adaptive regulations, robust oversight bodies, and collaborative efforts with neighbouring nations to establish an

ethical business environment. The study highlights the positive correlation between financial development and dividend policy, underscoring the significance of nurturing well-functioning financial systems. Policymakers can focus on implementing measures that enhance capital access, reduce information asymmetry, and improve corporate governance to positively influence dividend decisions in African-listed firms. Moreover, the study reveals the positive effects of press freedom on dividend policy, suggesting that policymakers ought to work towards ensuring a climate of media transparency. Press freedom can contribute to improved corporate governance, reduced corruption, and increased investment, aligning with broader social and economic goals. Policymakers can leverage the study's insights into the complexity of factors influencing dividend decisions. This understanding may prompt a redirection of focus toward other aspects of institutional development or a recognition that certain factors may not be primary drivers of dividend decisions in the African context.

- Significance to corporate finance managers and investors:
  Finance managers and investors can derive practical insight and decision-making guidance from this study. For corporate finance managers, understanding the negative impact of investor protection on dividend policy provides valuable guidance in navigating decision-making processes. With the realisation that regions with robust investor protection may experience lower dividend payouts, managers can tailor their financial strategies accordingly. Furthermore, recognising a positive correlation between financial development and dividend policy allows corporate finance managers to strategically leverage mature financial markets to enhance dividend payouts. Factors such as improved access to capital, reduced information asymmetry, and enhanced corporate governance associated with financial development, can positively influence firm financial performance. The study also underscores the significance of press freedom on dividend policy, emphasising the importance of media transparency. Corporate finance managers can consider adopting practices that promote transparency and reduce information asymmetry, thereby enhancing corporate governance and potentially attracting greater investor confidence. Investors, too, can benefit from the study's insights into the varied impact of institutional factors across African countries. By considering the unique institutional contexts of each country, investors can make informed investment decisions, effectively navigating the complexities of dividend policies and corporate behaviour in different regions.

In summary, the study's significance extends to academia, through theoretical and empirical contributions, offering actionable insights for policymakers to shape a conducive environment for investment, and providing practical guidance for corporate finance managers and investors navigating the intricate landscape of dividend policy in African-listed firms.

1.5.2 Significance of the study on innovation, dividend policy, and institutional development

The significance of the study on innovation, dividend policy, and institutional development has important implications for policymakers, academia, and corporate finance managers

- Significance for academia:

  The study advances theoretical development by challenging conventional wisdom and enriching existing theories, particularly trade-off theory, pecking order theory, and residual theory. It offers nuanced insight into the intricate relationship between innovation and dividend policy within the context of African non-financial firms. An innovative aspect of the study lies in the utilisation of patents at the country level, as a measure of innovation. This methodological approach introduces a novel dimension to the research, aligning with the global nature of innovation, and contributing to the empirical methodology employed in assessing the influence of innovation on corporate financial decisions. Furthermore, the study contributes to a granular understanding of the influence of institutional quality on the relationship between innovation and dividend policy by differentiating effects in weak and strong institutional environments. This detailed analysis enhances the study's ability to discern the impact of innovation on dividend policy, providing valuable insight into the complex interplay of these factors.
- Significance for policymakers:

  The study highlights significant opportunities for policymakers to design and implement policies that strengthen institutional frameworks, fostering an environment where innovation can positively influence dividend policies. This is particularly crucial for promoting economic growth through innovation while considering the implications for corporate finance. Policymakers in African countries can leverage these findings to enhance investor confidence by understanding that the impact of innovation on dividend policy is contingent on institutional development. Specifically, the study finds that the negative effect of innovation on dividend policy is more pronounced in countries with weak institutional development characterised by low investor protection, underdeveloped

financial markets, governmental ineffectiveness, weak rule of law, and high levels of corruption while stronger institutional development mitigates this negative relationship. By prioritizing improvements in institutional development, policymakers can create an environment that not only encourages innovation but also assures investors that their interests are safeguarded, potentially attracting more investments to the region. Understanding the dynamics of innovation and dividend policy in African firms is essential for policymakers interested in emerging markets, providing valuable insights into how policy decisions can impact corporate financial strategies, contribute to overall economic growth, and offer a roadmap for navigating the intersection of innovation and corporate finance.

- Significance for corporate finance managers and investors

  This study offers valuable insights for corporate finance managers and investors by elucidating the complex interplay between innovation, institutional development, and dividend policies in African listed firms. For corporate finance managers, the identification of a negative relationship between innovation and dividend policy highlights the tendency of firms heavily invested in innovation to retain a larger portion of profits, rather than distributing them as dividends. Moreover, the study reveals that this negative relationship is more pronounced in countries with weak institutional development, characterized by low investor protection, underdeveloped financial markets, governmental ineffectiveness, weak rule of law, and high corruption, while stronger institutional development mitigates it. This understanding is crucial for informed financial decision-making, allowing managers to strategically balance long-term growth potential with short-term dividend considerations. For investors, particularly those in African markets, the study underscores the importance of evaluating both innovation activities and the institutional environment when assessing dividend strategies. Innovation serves as a positive signal of a company's growth prospects, and understanding the dynamics between innovation and dividend policy aids in making better-informed investment decisions, appreciating the strategic choices firms make, and their implications for future growth and shareholder value.

In summary, the study's contributions to academic literature, theoretical understanding, and practical implications for policymakers and corporate finance managers make it a valuable source for advancing knowledge in the fields of corporate finance, innovation, and institutional economics, particularly in the context of African nonfinancial firms.

1.5.3 Significance of the study on institutional determinants of dividend smoothing

The significance of the study on institutional determinants of dividend smoothing is multifaceted and has implications for various stakeholders, including policymakers, academia, and corporate finance managers and investors.

- Significance to academia:

  The study addresses a critical gap in the existing literature by focusing on dividend smoothing in African non-financial listed firms, thereby expanding the understanding of dividend policy beyond developed economies and contributing to a more comprehensive global perspective. By empirically testing and supporting the agency and information asymmetry model of dividend smoothing in the African context, the study enriches existing theoretical frameworks. Moreover, the incorporation of a wide array of institutional factors provides a more nuanced understanding of dividend policy determinants. The study's methodological approach, which involves creating partitions based on "high" and "low" institutional quality for each determinant, adds rigour to the research. Additionally, the quantitative estimation of equations on these partitions adds depth to the analysis, allowing for a more granular understanding of the influence of different factors on dividend smoothing. Utilising a dataset spanning Africa and covering the period from 2006 to 2020, along with the adoption of a novel measure of financial development devised by Svirydzenka (2016), the study extends the application of agency and information asymmetry theories to the African context. Furthermore, it introduces new theoretical ideas, such as the role of low Speed of Adjustment (SOA) in weak institutional environments, the connection between dividend stability and attracting long-term investors, and the link between dividend stability and risk management.

- Significance to policymakers:

  The study on institutional determinants of dividend smoothing holds significant implications for policymakers. It underscores that institutional factors such as governance quality, investor protection, property rights, press freedom, and financial market development play crucial roles in shaping firms' dividend policies. The findings suggest that firms in environments characterized by weak institutions tend to employ more dividend smoothing strategies to mitigate risks and signal stability to investors. For policymakers, these insights highlight the importance of strengthening institutional frameworks. Improving governance effectiveness, enhancing investor protection laws, promoting

property rights, and fostering transparent financial markets could reduce the need for firms to resort to dividend smoothing. By creating an environment conducive to reliable and transparent corporate practices, policymakers can enhance investor confidence, attract more investment, and foster sustainable economic growth. Understanding these institutional determinants can guide policymakers in crafting regulations and policies that promote financial stability, encourage capital formation, and support long-term economic development in African markets. By addressing institutional weaknesses identified in this study, policymakers can contribute to creating a more resilient and investor-friendly business environment, ultimately benefiting both firms and the broader economy.

- Significance to corporate finance managers and investors:
  The empirical validation of dividend smoothing theories in the African context offers practical insights for corporate finance managers, aiding them in navigating the intricacies of the African business environment. Understanding the influence of institutional factors on dividend smoothing equips managers with valuable knowledge to develop appropriate dividend strategies tailored to prevailing institutional conditions. Of particular note is the study's introduction of the concept that a low speed of adjustment (SOA) toward target payout, smoothed dividends, or stable dividends can function as a risk mitigation strategy in weak institutional settings. This insight holds value for corporate finance managers seeking to mitigate risks associated with weak institutional environments. Moreover, the study's findings directly impact decision-making processes, particularly in addressing social challenges and fostering economic growth. Managers are encouraged to capitalise on well-developed financial markets, while investors are advised to carefully consider the regulatory and institutional landscape when making investment decisions. These insights provide actionable guidance for both managers and investors in navigating the dynamic African business landscape.

In conclusion, the study on institutional determinants of dividend smoothing offers valuable contributions to both academic research and practical decision-making, providing a nuanced understanding of how institutional factors influence dividend smoothing policies in African-listed firms. The insights gained from this study have implications for shaping corporate practices, guiding investment decisions, and informing policy initiatives.

1.6 Contribution to the body of knowledge

1.6.1 The study on how investor protection, press freedom, property rights, financial development, and corruption shape dividend policy in African firms

The study on how investor protection, press freedom, property rights, financial development, and corruption shape dividend policy in African firms presents several contributions to the body of knowledge in corporate finance, institutional economics, and emerging market studies. By emphasising the significance of regional and institutional nuances in shaping dividend behaviour, the study enriches the literature on corporate finance. It challenges existing theories, particularly LaPorta's substitute model, by introducing new variables, such as press freedom, as determinants of dividend policy. The study refines existing theories by confirming the negative effect of investor protection on dividend policy, aligning with the substitute model proposed by LaPorta et al. (2000) Additionally, it challenges conventional wisdom by revealing a positive relationship between press freedom and dividend policy, contributing to a deeper understanding of the role of media transparency in corporate financial decisions. A longitudinal analysis spanning 2006 to 2020 captures dynamic relationships, contributing methodologically to the understanding of institutional determinants of dividend policy over time. The empirical findings have practical implications for policymakers, suggesting the importance of championing investor protection, financial market development, and press freedom to foster a thriving investment ecosystem. Clear and adaptive regulations, oversight bodies, and collaborative efforts with neighbouring nations are imperative for an ethical business environment conducive to favourable dividend policies. The study provides insights into the complexity of factors influencing dividend decisions in the African context. While corruption, property rights, GDP per capita, and financial institution development do not significantly influence dividend policy, the findings contribute to a nuanced understanding of institutional determinants in African firms, guiding policymakers toward more targeted interventions. Insights from the study extend beyond the African region, offering lessons for firms in other emerging markets globally. Policymakers, researchers, and practitioners worldwide can draw from the study's findings to understand the intricate relationship between institutional factors and dividend policy. The study highlights the social and economic impacts of dividend policy determinants, emphasising the role of press freedom in improving corporate governance, reducing corruption, stimulating investment, and enhancing transparency. The relationship between dividend policy and financial development contributes to economic growth and stability, further underlining the study's relevance beyond academic circles.

In summary, the thesis contributes to the body of knowledge by offering theoretical insights, refining existing theories, employing rigorous methodologies, providing practical implications, unravelling the complexity of factors, demonstrating generalizability, and highlighting the social and economic impact

1.6.2 The study on innovation, dividend policy, and institutional quality

This study on innovation, dividend policy, and institutional development in African non-financial firms contributes significantly to the body of knowledge in several keyways. Firstly, it uncovers a negative relationship between innovation and dividend policy in African non-financial firms, challenging conventional wisdom and enriching existing theories. This nuanced understanding offers insights into how innovation decisions impact dividend policies, extending beyond traditional research areas. Secondly, by focusing on African firms, the study addresses a gap in the literature predominantly concentrated on developed or emerging markets. This expansion of knowledge provides specific insights into African business contexts, offering a fresh perspective on corporate financial decision-making tailored to these unique environments. Thirdly, spanning from 2006 to 2020, the study conducts a comprehensive longitudinal analysis, revealing insights into the evolving relationship between innovation and dividend policy amidst economic fluctuations, technological advancements, and institutional reforms in Africa. Furthermore, the study utilizes patent applications at the country level as a robust measure of innovation, aligning with global metrics and enhancing methodological rigor. It also introduces a novel stratification of institutional environments, capturing heterogeneity within institutional quality beyond traditional measures. Moreover, the study identifies institutional development as a critical moderating factor influencing the relationship between innovation and dividend policy. This adds a novel dimension to the research, emphasizing the pivotal role of institutional contexts including investor protection, financial market development, rule of law, governance effectiveness, and control of corruption in shaping corporate financial decisions across African markets. Additionally, the investigation reveals that the negative impact of innovation on dividend policy is more pronounced in countries with weak institutional development, characterized by low investor protection, underdeveloped financial markets, government inefficiency, weak rule of law, and high corruption levels. This underscores how variations in institutional development significantly influence the strength of the relationship between innovation and dividend policy in African firms.

Practically, these findings hold profound implications for policymakers, investors, and corporate management. Policymakers can leverage these insights to design policies that strengthen institutional frameworks, fostering environments conducive to corporate innovation and effective dividend policy management. Investors can enhance decision-making by considering firms' innovation strategies alongside the prevailing institutional environment. Corporate management gains strategic insights into optimizing the interplay between innovation, institutional development, and dividend policies to enhance long-term financial performance.

In conclusion, this study underscores the pivotal role of institutions in shaping corporate financial decisions in Africa. It highlights the imperative for policymakers to prioritize improvements in investor protection, financial markets, rule of law, government effectiveness, and anti-corruption measures to cultivate an environment conducive to both innovation and dividend distribution. By advancing our understanding of the complex interplay between innovation, institutional development, and dividend policy in African non-financial firms, this study contributes significantly to theoretical development and practical decision-making in finance, innovation, and institutional economics

1.6.3 The study on determinants of dividend smoothing.

The study on institutional determinants of dividend smoothing significantly advances the field in several keyways. Firstly, it addresses a critical gap in the literature by focusing on dividend smoothing within African non-financial listed firms, expanding beyond the predominantly studied developed economies. By examining a region with unique economic, political, and institutional characteristics, the study broadens our understanding of dividend smoothing dynamics, shedding light on how firms in Africa navigate dividend policy under distinct institutional frameworks. Secondly, the adoption of an institutional perspective represents a notable contribution. By investigating various institutional factors such as investor protection, property rights, corruption control, press freedom, financial development, rule of law, government effectiveness, legal systems, regulatory quality, political stability, and economic growth on dividend smoothing and stability, the study enriches the literature by considering the broader economic and governance context influencing firms. This comprehensive approach allows for a nuanced analysis of how institutional environments shape dividend policy decisions across different African markets. Thirdly, the study empirically validates the agency and information asymmetry model of dividend smoothing, enhancing the practical understanding of mechanisms driving dividend policy decisions in African firms. This

empirical validation not only strengthens existing theoretical frameworks but also provides valuable insights for practitioners, policymakers, and scholars seeking to understand dividend behaviour in emerging market contexts.

Furthermore, the methodological approach involving the creation of partitions based on institutional quality for each determinant allows for a rigorous analysis. The quantitative estimation of equations across these partitions, along with comparative coefficient analysis, enhances the study's robustness and contributes to a deeper understanding of how specific institutional factors influence dividend smoothing practices. The study's use of dividends to assets as a measure of dividend policy is a justified methodological choice, extending the application of agency and information asymmetry theories to the African context. Moreover, introducing the theoretical idea that a low speed of adjustment (SOA) toward target payout can serve as a risk mitigation strategy in weak institutional settings adds a new dimension to theoretical discussions on the roles of dividends in signalling and risk management. Lastly, understanding the determinants of dividend smoothing has broader implications for addressing social challenges and fostering economic growth. By emphasizing the importance of fair and transparent corporate practices and highlighting the impact of weak governance and corruption on dividend smoothing, the study underscores the critical role of good governance in promoting economic development in African countries.

In summary, this study significantly advances the understanding of dividend smoothing in African non-financial listed firms, offering empirical and theoretical contributions with practical implications for various stakeholders.

1.7 Structure of the thesis

The thesis is structured into five chapters. This current chapter provides an overview of the research topic, motivation, objectives, and significance of the study. The subsequent chapters are organised as follows:

The second chapter delves into the interplay among investor protection, property rights, press freedom, corruption, and financial development on dividend policy. The primary question addressed is: to what extent do institutional factors such as investor protection, property rights, press freedom, corruption, and financial development influence a firm's dividend policy? This chapter initiates the discussion, conducts a review of pertinent literature, explores the anticipated impact of institutional factors on dividend policy, formulates hypotheses, outlines

the data and methods employed for hypothesis testing, presents empirical results, and concludes with a discussion of the findings.

Moving on to the third chapter, we explore the intricate relationship between firm innovation and dividend policy, seeking to answer two key questions: firstly, what characterises the relationship between innovation and dividend policy? Secondly, is the strength of this relationship influenced by the quality of institutions or institutional governance such as investor protection, financial market development, control of corruption, government effectiveness, and rule of law? The chapter introduces the topic, delves into different types of innovation, examines theoretical and empirical connections between innovation, dividend policy, and institutions, establishes hypotheses, provides details on the data and methods utilised for hypothesis testing, presents empirical results, and concludes with a discussion of the findings.

In the fourth chapter, an analysis is conducted on the impact of various institutional factors, including investor protection, property rights, press freedom, corruption, financial development, financial institution development, financial market development, legal systems, economic growth, government effectiveness, political stability, regulatory quality, and rule of law, on the speed of adjustment toward the target dividend payout ratio. The central question addressed is: what are the institutional determinants of dividend smoothing? This chapter introduces the topic, reviews relevant studies, discusses the anticipated impact of institutional factors on dividend smoothing, formulates hypotheses, outlines the data and methods used for hypothesis testing, presents empirical results and concludes with a discussion of the findings.

Chapter 5 serves as the concluding chapter, providing a summary of the thesis, discussing the implications of the results, acknowledging limitations, and suggesting avenues for future academic research arising from the study.

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CHAPTER TWO: Comprehensive Analysis of institutional determinants: How investor protection, press freedom, property rights, financial development, and corruption shape dividend policy in African firms

2 Introduction

The topic of dividend policy has long been a subject of intense debate within the realm of corporate finance. Over the decades, it has continued to captivate the attention of scholars and industry experts alike. Despite the extensive theoretical and empirical contributions made by researchers, the fundamental question of why firms choose to pay dividends remains both elusive and contentious. The determinants of dividend policy have undergone meticulous examination, yet a consensus regarding the institutional factors influencing dividend decisions is unclear. Although our understanding of dividend payout policies has advanced since Black's seminal work in 1976, many fundamental inquiries, such as the timing, magnitude, and rationale behind dividend disbursements, continue to elude clarification (Shapiro & Zhuang, 2015). Furthermore, even after decades of investigation, no unanimous agreement has emerged concerning the factors that sway dividend policy (Al-Malkawi et al., 2015). Empirical evidence further highlights that corporate payout patterns exhibit not only temporal variation but also significant disparities between countries, particularly in the context of developed and emerging capital markets (See, Glen et al., 1995). Consequently, discerning the driving forces behind cross-country variations in dividend policies remains an enigmatic challenge.

Prior research underscores the influential role of the institutional environment on firms' financing strategies. For instance, Booth and Zhou (2017) emphasise the significance of institutional structures, encompassing a nation's financial system, cultural norms, legal frameworks, and industrial organisation, in shaping dividend policy. Similarly, Al-Najjar and Kilincarslan (2017) contend that regulations, legal landscapes, institutional settings, financial crises, and macroeconomic trends all hold sway over a firm's dividend policy. Aivazian et al., (2003) demonstrate that emerging market companies tend to distribute higher dividends than their US counterparts, attributing this difference to the influence of country-specific factors. Lozano and Caltabiano (2015) ascribe the dividend behaviour of Brazilian firms to the overarching importance of their institutional framework. Building on this body of literature, we postulate that various institutional factors, including investor protection, property rights, press freedom, corruption, and financial market development, can give rise to agency conflicts and information asymmetry, thus influencing dividend policy.

It is important to recognise that different countries exhibit diverse institutional strengths and weaknesses, which can either mitigate or exacerbate agency problems, consequently shaping dividend policy outcomes. An institutional fit can facilitate learning, enhance legitimacy, and attract high-quality resources from the institutional environment (Volberda et al., 2011), which, in turn, can influence firm performance and subsequently affect dividend policy. Conversely, institutional pressures can deleteriously impact firm performance (Tunyi et al., 2021), potentially intensifying agency conflicts, increasing capital costs, and, consequently, negatively impacting dividend policy.

Scholars have endeavoured to evaluate the institutional determinants of dividend policy across various regions, including Asia (Goyal & Muckley, 2013), the Middle East (Athari et al., 2016), the United States (Agrawal, 2013), and Europe (Renneboog & Szilagyi, 2020). Nevertheless, the bulk of extant research appears to concentrate predominantly on the effects of investor protection and corruption, while often overlooking other institutional factors such as press freedom, property rights, and financial development. Additionally, past dividend studies have predominantly scrutinised developed markets, with limited attention paid to emerging markets (Al-Najjar & Kilincarslan, 2018). This skewed focus on developed markets has sometimes resulted in corporate finance models designed for these settings faltering when applied in emerging economies (Bekaert and Harvey, 2000). Additionally, evidence from the literature reveals that dividend policy decisions in developed markets differ from those of developing markets (Ranti, 2013). Furthermore, while financial determinants seem to be crucial for dividend decisions across both emerging and US markets (Aivazian et al., 2003), their sensitivity to these determinants varies between countries. Institutional factor studies are disproportionately skewed toward developed markets (e.g., Boţoc and Pirtea, 2014; Goyal and Muckley, 2013; Javakhadze et al., 2014; Jeong, 2012; La Porta et al., 2000; Moortgat, Annaert and Deloof, 2017), with scant attention paid to Africa in particular (e.g., Athari, Adaoglu and Bektas, 2016; Yensu and Adusei, 2016). Moreover, most dividend policy research in Africa predominantly delves into firm-specific factors, neglecting the potential influence of institutional factors. However, as seen in the studies by Athari et al., (2016), placing focus on investor protection in Islamic banks in North Africa and Yensu and Adusei (2016) investigating corruption in African firms make it plausible to assert that other institutional factors may wield substantial sway over dividend policy.

Regarding the role of press freedom, we argue that its absence can elevate agency costs, hinder accountability, limit information flow, weaken corporate governance, expose firms to reputational risks, and erode investor confidence, thereby negatively impacting dividend policies. Conversely, high press freedom is posited to curb the misappropriation of cash flows (Aguilera et al., 2015), correlating with lower corruption (Dutta & Roy, 2016) while leading to better governance (Almaskati et al., 2020), increased investment, and growth (Alam & Ali Shah, 2013), lower external financing costs (Qi et al., 2010), and consequently higher dividends. This examination sheds light on how external factors, particularly press freedom, can shape a company's financial decisions, governance practices, and reputation management, providing valuable insights for investors, stakeholders, and policymakers alike. Additionally, we assert that robust property rights influence dividend policy by encouraging managers to pay out dividends, thereby restricting opportunities for corporate insiders to misappropriate cash flows. Accordingly, strengthened property rights are linked to enhanced firm performance (Hanousek and Kochanova, 2016;), increased firm profits (Estrin and Prevezer,2011), and reduced corruption (Driffield et al., 2016), and thereby lead to high dividend payouts. Conversely, in line with the free cash flow theory, insecure property rights may result in resource misappropriation, reduced profits, diminished free cash flow, and consequently, low dividends.

Regarding financial development, we assert that our comprehensive measure of financial development significantly influences increased dividend payments on the part of these firms. From the perspective of agency cost theory, financial development has the potential to mitigate agency costs by enhancing corporate governance mechanisms. In financially developed markets, managers are motivated to align their interests with shareholders, fostering a propensity for higher dividend distributions. Shareholders favour dividends for their direct and tangible returns, mitigating the agency problems associated with managerial discretion. According to the free cash flow theory, heightened financial development provides companies with fewer obstacles in returning surplus cash to shareholders. This environment enables efficient distribution of excess funds, often in the form of dividends, rather than letting cash accumulate within the company. Lastly, drawing from signalling theory, financial development facilitates effective communication between firms and investors, augmenting the signalling value of dividends. Companies may be more inclined to pay higher dividends as a means of signalling financial strength and stability. Analysing the impact of financial development on dividends in diverse African regions is crucial for tailoring effective economic policies. The

study's results can inform policymakers and businesses when optimising capital structure and shareholder value, thereby contributing to efforts aimed at fostering economic growth, attracting investments, and improving financial system efficiency in the region. Furthermore, exploring the connection between financial markets and dividend policy offers insights into how companies communicate their financial health to the market. Additionally, examining the influence of financial development on dividend policy in Africa contributes to a deeper understanding of how the financial landscape influences corporate decisions and economic growth, informing policy decisions, promoting financial stability, and encouraging responsible business practices.

Given the limited research on institutional determinants of dividend policy in Africa and the inconsistent findings regarding these determinants in other emerging and developing markets (USA, Europe, Turkey, Latin America, Oman, Middle East), the current study is well-justified. It not only contributes to the empirical literature, but also innovatively approaches the subject, analysing data spanning from 2006 to 2020, and introducing novel variables such as press freedom, property rights, and financial development as determinants of dividend policy in Africa, contrasting with previous research like Athari et al., (2016) and Yensu and Adusei (2016). Importantly, the inclusion of these institutional variables opens new avenues to explore the influence of agency costs and signalling theories on dividend policy. Our methodology also contributes to the field by applying methods and estimation techniques not previously employed in the African context. Unlike existing African literature (see for example, Athari et al., 2016; Yensu and Adusei, 2016), this study embraces a broader set of institutional proxies, encompassing investor protection, property rights, press freedom, corruption, and financial development. Through this approach, the study provides a comprehensive understanding of dividend policy among African firms, enriching the empirical evidence for testing existing theories and charting future theoretical directions. Lastly, unlike prior studies that focus on payout policies within specific countries or regions, our study adopts a multi-country perspective, examining the dividend policies of 13 stock markets in Africa. This broader scope extends beyond individual countries and regional studies, utilising a large sample size. We also employ diverse corruption measures, diverging from the approach taken by Yensu and Adesui (2016). Furthermore, we adopt a new measure of financial development that incorporates the Financial Institutions Index (FII) and the Financial Markets Index (FMI). By addressing these gaps in the literature, the study thoroughly scrutinises the institutional determinants of listed non-financial firms in Africa.

From a practical standpoint, this study seeks to answer crucial questions: to what extent do institutional factors such as investor protection, property rights, press freedom, corruption, and financial development influence a firm's dividend policy? Our choice of focusing on Africa is underpinned by several factors. Firstly, Africa presents a unique scenario due to its prevalent ownership concentration. High ownership concentration can confer substantial control to majority shareholders, potentially prioritising their financial interests and leading to lower dividends for minority shareholders. Secondly, weak investor protection (D'Agostino et al., 2016; Munisi et al., 2014) can hinder investor willingness to engage in countries where returns might be perceived to be subpar. Countries with low investor protection may witness firms distributing higher dividends in a bid to secure investment or access cheaper capital, as per La Porta et al., (2000) substitute model. Thirdly, corruption is rife across African nations (Munisi et al., 2014), potentially eroding investor trust, and hindering companies' access to capital, thereby adversely affecting dividend policy. Lastly, the underdeveloped state of financial markets in Africa (Andrianaivo & Yartey, 2010) can impede investor access to vital company information, leading to uninformed investment decisions. Additionally, inadequate financial development may inhibit a firm's growth prospects and, consequently, its dividend-paying capacity. These unique characteristics make our case study valuable for both investors and policymakers.

Understanding the institutional determinants of dividend policy in Africa holds significant importance for investors, policymakers, and managers alike. Therefore, comprehending the institutional determinants of dividend policy in Africa is pivotal for investors to make informed investment decisions, policymakers to foster economic growth and stability, and managers to align dividend strategies with the prevailing institutional landscape. This knowledge not only enhances market transparency but also contributes to the overall development and sustainability of both businesses and economies.

This chapter is organized as follows: Section 2.1 provides an overview of related research. Section 2.2 outlines the hypothesis development. Section 2.3 details the data analysis and research methodology. Section 2.4 presents the empirical findings. Finally, Section 2.5 offers a summary or conclusion of the chapter.

2.1 Review of related studies

2.1.1 Seminal studies on dividend policy

2.1.1.1 Lintner's (1956)

Lintner (1956) remains one of the foundational works in corporate finance, holding enduring significance for research in dividend policy. Lintner's pioneering research provides a theoretical framework that offers insight into the intricate decision-making processes guiding dividend payouts within companies. His seminal study, published in 1956, marked a milestone in corporate finance by shedding light on how managers establish their firms' dividend policies. Lintner's methodological approach involved interviews with managers from 28 selected companies, culminating in the development of a predictive model for dividends. His work yielded essential stylised facts that underpin the decision-making behind dividend distributions. Firstly, it was observed that companies establish long-term payout ratios, thereby tethering current dividend amounts to prevailing reported earnings. Desired dividend outcomes are achieved through gradual adjustments in dividend payments over successive years, thus giving rise to what is known as the "partial adjustment model." This model implies that companies tend to modify their dividends incrementally, in response to changes in earnings and payout ratios, favouring gradual shifts over abrupt, significant alterations. Secondly, Lintner's research highlighted the centrality of the payout ratio in dividend decisions. Firms typically aim for specific dividend payout ratios when determining their dividend policies, adjusting dividends gradually to approach these targeted ratios. Multiple variations of this model remain influential in contemporary dividend policy analysis. Moreover, subsequent survey studies conducted by Baker and Powell (1999), Baker et al., (2001), and Brav et al., (2005) substantiate and reinforce Lintner's findings, attesting to the enduring relevance and validity of his research insights. In addition to these contributions, Lintner (1956) postulated a fundamental relationship between dividends and earnings as follows:

$$D^*_t = rE_t \qquad \textbf{(2.1)}$$

where D^*_t is the target level of dividends for any year t, r the target payout ratio and E_t the firm's net earnings in year *t*.

Therefore, firms will target to pay a certain portion of their earnings each year. In addition, Lintner (1956) also predicts that a firm will only partially adjust to the target dividend level in any given year, where the change in dividend payments from year $t-1$ to year t is given by:

$$D_t - D_{t-1} = \alpha + c\left(D*_t - D_{t-1}\right) + \varepsilon_t \qquad \textbf{(2.2)}$$

Where α is the intercept term, c is the speed of adjustment coefficient, ε_{it} is the error term, $D*_t$ is the target dividend payment in period *t*, D_t is the actual dividend payment in the period t, and D_{t-1} is the actual dividend payments in the period $t-1$.

In essence, Lintner (1956) model underscores the considerable emphasis managers place on historical dividend trends and future earnings outlooks when shaping contemporary dividend policies. Furthermore, Lintner (1956) research laid a cornerstone for subsequent investigations, contributing to the establishment of the notion that dividend decisions are far from arbitrary. Instead, they are intricately influenced by a company's earnings trajectory, payout ratios, prospects for future growth, and a host of other pertinent factors. Additionally, Lintner's study played a pivotal role in cementing the understanding that companies tend to adhere to stable dividend policies over time, eschewing abrupt and significant shifts. All in all, the study by Lintner (1956) provides a foundational theoretical framework for comprehending the intricate process by which companies arrive at dividend decisions. Its enduring significance persists as a touchstone in the realm of dividend policy research.

2.1.1.2 Miller and Modigliani's (1961) Irrelevance Theory

A finance debate revolves around the impact of dividend policy on firms' value, as noted by Baker and Weigand (2015). Economists have identified three predominant viewpoints, often referred to as the dividend controversy, as articulated by Brealey and Myers (2003), where on the right, there's a conservative camp advocating that an increase in dividend payout augments firm value, and on the left, a radical faction contends that increasing dividend payout diminishes firm value; while in the centre, a middle-of-the-road perspective posits that dividend policy bears no significant influence. The middle-of-the-road stance was notably founded in 1961 by Miller and Modigliani, commonly referred to as "M&M." They presented a theoretical paper asserting the irrelevance of dividend policy. Before M&M's study, the prevailing consensus among researchers was that higher dividends equated to higher firm value. For example, Graham and Dodd (1934) argued that the primary purpose of a corporation's existence was to pay dividends, with higher dividend-paying firms commanding higher share prices. However, MM challenged this view, asserting that a higher dividend payout did not necessarily translate into greater firm value.

According to the M&M model, a company's worth is determined by its assets and the cash flows generated from those assets, rather than how firms distribute these cash flows to shareholders. Consequently, investment policy alone dictates value. In M&M's view, dividend policy is irrelevant in perfect and efficient capital markets. They also contended that rational investors ought to be indifferent between dividends and capital gains. Moreover, they posit that different payout policies merely divide a fixed 'pie' of cash flow, with the value of its pieces always equating to the value generated by the underlying investment policy. As a result, investors would be indifferent to various feasible dividend policies. Therefore, altering payout policies would not impact firm value. This view relied on M&M's assumptions of a perfect market, encompassing factors such as no tax distinctions between dividends and capital gains, no transaction or flotation costs in securities trading, universal access to symmetrical and costless information, the absence of conflict of interest between managers and shareholders (i.e., no agency problem), and all market participants being price takers. However, these perfect market assumptions have been contested by researchers, who argue that real-world market imperfections, such as taxes, transaction costs, information asymmetry, and agency problems, invalidate MM's theory of irrelevance. DeAngelo and DeAngelo (2006) specifically questioned the validity of M&M's irrelevance theory due to these unrealistic assumptions about perfect and frictionless capital markets. They argued that dividend policy can indeed affect firm value.

Nevertheless, M&M's views on dividend irrelevance have exerted substantial influence on financial theory, albeit with some criticism. M&M's dividend irrelevance proposition has formed the foundation for subsequent research on dividend policy. Researchers have begun relaxing the assumptions of a perfect market, serving as the basis for much theoretical and empirical exploration of dividend policy. In essence, the M&M study has provided a theoretical framework for understanding how investors value a company and make investment decisions. Their irrelevance theory remains a subject of active debate and has significantly influenced the development of modern dividend policy theory, serving as an essential reference for researchers, policymakers, and practitioners.

2.1.1.3 Black's (1976) Dividend Puzzle

The dividend puzzle delves into the perplexing questions surrounding why firms pay dividends and why investors exhibit interest in dividends, despite their apparent irrelevance, rigidity, costs, and tax disadvantages. In a similar vein, Feldstein and Green (1983) raise inquiries about companies paying dividends, especially considering the heavier tax burdens borne by dividends compared to retained earnings. However, Black (1976) primarily focuses on two pivotal questions concerning dividend policy: Why do firms opt for dividend payouts? Why do investors favour dividend-paying stocks? Consequently, when taxation is introduced into an otherwise frictionless model where payout policy appears irrelevant, the dividend landscape becomes more intricate, suggesting that investors consistently benefit more from lower, or no dividends. This constitutes the essence of the Black dividend puzzle: where the apparent paradox of companies favours substantial dividend payments.

The Black dividend puzzle study holds a significant place in dividend policy research as it underscores a divergence between the predictions of the M&M dividend irrelevance theory and real-world corporate behaviour. The study's findings reveal that companies with higher payout ratios (the percentage of earnings distributed as dividends) tend to yield higher stock returns than those with lower ratios, even after adjusting for variables such as risk and growth prospects. Consequently, Black's study challenges the predictions of the M&M theory, which posits that dividend policy holds no sway over a company's value, and investors remain indifferent as to whether they receive dividends or not. It suggests that dividends wield a more substantial influence over a company's financial performance than previously assumed.

In summary, the Black Dividend puzzle study not only opened new avenues for research in the field of dividend policy but also paved the way for the development of novel theories such as signalling and agency theory. These theories strive to elucidate the observed behaviour of companies and the intricate relationship between dividends and stock returns.

2.1.2 Theories on dividend policy

The theoretical and empirical literature on the determinants of dividend policy often presents inconsistent conclusions, primarily due to the varied contexts in which these studies are conducted. A notable gap in the literature is the lack of focus on African firms, where unique institutional factors significantly influence corporate governance and financial decision-making. This study aims to address this gap by examining how investor protection, press freedom, property rights, financial development, and corruption shape dividend policy in African firms, thereby adding new insights to the existing body of knowledge.

2.1.2.1 The Agency Cost Theory

One explanation for why firms pay dividends is provided by agency cost theory, as articulated by Jensen and Meckling (1976). According to their theory, an agency relationship constitutes a contract in which one or more individuals (the principal) engage another individual (the agent) to perform a service on their behalf, involving the delegation of decision-making authority to the agent. Consequently, managers of firms often act as agents on behalf of shareholders. In principle, there exists a separation of ownership and control between these managers and shareholders. However, frequently, both agents and owners share the common objective of maximising individual utility. Consequently, agents may not consistently act in the best interests of the principals, but instead, may pursue their own self-interest. This inherent agency relationship generates agency costs, an implicit expense stemming from the potential conflict of interest between shareholders and corporate managers. Additionally, this agency cost represents another instance of a market imperfection. Consequently, owners must implement appropriate incentive schemes and monitoring mechanisms to align the activities of agents with their interests and curtail any deviant actions. Ultimately, the payment of dividends can serve to align the interests of shareholders and managers, while also mitigating the agency issues between them. This is achieved by reducing the discretionary funds available to managers (Nuhu, 2014; Yensu & Adusei, 2016). Additionally, the payment of dividends compels managers to access the capital market to raise external funds to replenish the dividends paid out, reducing the opportunity for managers to use free cash flow for personal activities (Kulathunga & Azeez, 2016). Obtaining funds from capital markets also increases the level of external monitoring of corporate activities. Hence, corporate dividends diminish agency costs, either by augmenting external monitoring or by reducing excess cash flows available to managers that might be misused for personal interests (Easterbrook, 1984; Jensen, 1986; Jensen & Meckling, 1976; Rozeff, 1982).

Agency theory also sheds light on the connection between dividend policy and corporate governance. La Porta et al., (2000) propose two models that elucidate the relationship between corporate governance and dividend policy. The first model, the "outcome model," posits that better-protected investors can compel corporate insiders to pay dividends to reduce agency costs. Accordingly, this model suggests a positive correlation between corporate governance and dividend policy. The second model, the "substitute model," suggests that companies with significant moral hazards deliberately pay dividends to investors who lack legal protection to establish a reputation for future external financing. This model implies a

negative relationship between corporate governance and dividend policy. Subsequent studies have provided support for both models.

The inconsistent conclusions in the literature can be attributed to differences in the institutional and economic environments across various contexts. For instance, the level of investor protection, the extent of press freedom, the strength of property rights, the degree of financial development, and the prevalence of corruption vary significantly across regions and countries. These factors play a crucial role in shaping corporate governance practices and dividend policies. In African countries, where institutions are often weaker and corruption more prevalent, the dynamics influencing dividend policy may differ markedly from those in developed economies.

This study aims to provide a nuanced understanding of how these unique institutional factors in Africa influence dividend policy. By examining the interplay between investor protection, press freedom, property rights, financial development, and corruption, this research will offer new insights into the determinants of dividend policy in African firms. This contribution is particularly important given the growing economic significance of African markets and the need for tailored corporate governance practices that address the specific challenges and opportunities in this context.

Ultimately, this study will enrich the existing literature by demonstrating how the distinct institutional environment in Africa shapes dividend policy, offering a comparative perspective that highlights the importance of context in corporate governance research

2.1.2.2 Free cash flow theory

Another explanation for why firms pay dividends is provided by the free cash flow hypothesis. This theory suggests that a company's decision to pay dividends hinges on its capacity to generate cash flow exceeding the funds required for investment in growth opportunities. In essence, free cash flow theory posits that a company ought to distribute dividends to shareholders when it possesses surplus cash that cannot be optimally invested in growth ventures. The works of Easterbrook (1984) and Jensen (1986) are widely cited as foundational to this theory. While Jensen's (1986) work does not explicitly address dividends, empirical researchers investigating dividend policy frequently draw upon it to motivate tests of the free cash flow hypothesis (Bhattacharyya, 2007). The free cash flow theory provides a distinct perspective on the classical agency cost theory. It rests on the contention that a conflict of interest emerges between managers and shareholders when excess funds remain after

financing all viable projects. In such cases, managers with control over the firm might channel this surplus cash into projects with negative net present values that could potentially benefit them personally rather than the company. This may manifest as extravagant spending on lavish offices or unwarranted mergers and acquisitions (Fairchild et al., 2014). Consequently, paying dividends is seen as a strategy to curtail free cash flow, thereby mitigating the problem of over-investment. Easterbrook (1984) and Jensen (1986) suggest that firms ought to return excess cash to shareholders through dividends or share repurchases to address this concern.

The pioneering test of the free cash flow hypothesis was conducted by Lang and Litzenberger (1989), who examined stock market reactions to dividend announcements among two categories of US firms, in terms of those prone to overinvestment and those not. Their findings indicated that the positive market reaction was more pronounced for the former group, providing support for the free cash flow hypothesis. Gugler and Yurtoglu (2003) corroborated these results in the German market. Similarly, Agrawal and Jayaraman (1994) tested the hypothesis and established a negative correlation between managerial ownership and dividends, positing that both serve as mechanisms to mitigate agency costs arising from free cash flow. Karpavicius and Yu (2012) discovered that increased institutional ownership corresponded to lower dividend yields, further bolstering the free cash flow hypothesis. Subsequent researchers (Ahmed, 2012; Fairchild et al., 2015; Osoro and Ogeta, 2004) also found evidence in favour of the theory. On the other hand, Kato, Loewenstein, and Stay (2002) encountered limited support for the free cash flow hypothesis in Japan. This mixed evidence could be attributed to variations in periods and methodologies adopted by different researchers, as well as the availability of new data sources over time, influencing the results (See, Baker & Weigand, 2015).

In conclusion, the free cash flow theory is crucial for explaining dividend policy, by asserting that a company's decision to pay dividends rests on its capacity to generate surplus cash flow beyond its investment needs for growth prospects. It offers a framework for understanding how a company's ability to generate cash flow and its growth potential can influence its dividend policy.

2.1.2.3 Life cycle theory

The life cycle theory, pioneered by Mueller (1972), explains the variability in dividend policy among firms. This theory posits that a company's dividend policy evolves as it navigates through distinct stages of its life cycle. Consequently, the attributes associated with a firm change as it progresses through its life cycle, leading to corresponding adjustments in its dividend policy (Mueller, 1972). This theory anticipates that a firm's resources, access to capital markets, and investment prospects will fluctuate throughout its life span. Hence, firms in their growth phase or early life cycle stages are inclined to distribute fewer dividends, whereas mature firms are more likely to allocate higher dividends. Young firms, commonly situated in start-up or growth phases, tend to reinvest earnings for expansion and allocate minimal or no dividends. As the company matures and reaches the maturity stage, its stability improves, and it generates more consistent profits, thereby enabling it to reward shareholders with dividends. Conversely, as the company approaches the latter part of its life cycle, entering the decline stage, dividends may decrease or cease entirely due to uncertainty surrounding future prospects and cash flow.

Jensen's (1986) agency theory of free cash flow complements the life cycle proposition by offering a plausible explanation for the observed dynamics. Jensen (1986) posits that, during the early stage, agency costs are less significant, assuming that managers are less prone to pursuing self-interest at the expense of profitable investments. Consequently, firms tend to issue fewer dividends. However, as firms reach the maturity stage and accumulate surplus capital, agency costs escalate, potentially undermining firm value. To mitigate these costs, mature firms often initiate or increase dividends to safeguard stock prices. Empirical evidence supporting the life cycle theory is mixed. While Banyi and Kahle (2014), DeAngelo et al., (2006), Denis and Osobov (2008), and Fairchild, Guney, and Thanatawee (2014) find backing for the theory, others such as Boţoc and Pirtea (2014), Benavides et al. (2016), and Yensu and Adusei (2016) do not. This divergence in results may stem from variations in time periods, methodologies, and variables employed to test each theory or explanation (See, Baker & Weigand, 2015).

In summary, the life cycle theory furnishes a valuable framework for comprehending how a company's life cycle stage can influence its dividend policy, elucidating how dividends can serve as a financial instrument across different stages of a company's existence.

2.1.2.4 Signalling theory

Signalling theory is based on the premise of information asymmetry between stockholders and managers. In this context, managers possess intimate knowledge of the company's internal information that shareholders lack. Managers are tasked with transferring this critical information to decision-makers, often employing costly yet credible means for this purpose. Within the signalling framework, corporate managers use dividend payouts to communicate information to the markets (Baker & Kapoor, 2015). The signalling theory posits that dividends serve as a medium for companies to convey information about their future prospects to the market. However, using dividends as a signal is costly, depleting the company's available cash reserves. When a company willingly pays dividends, that implies a high level of confidence in its future prospects. Consequently, profitable companies with a positive outlook are more inclined to pay dividends, while struggling firms or those with a negative outlook tend to reduce or eliminate dividends.

Debates surrounding the signalling theory have addressed whether dividends convey information about past earnings or future earnings. Miller and Modigliani (1961) initially raised the question of whether dividends communicate information about future earnings. Lintner (1956) also indicated that dividends function as a signalling mechanism, with the market utilising dividend announcements to gauge a firm's share value. Bhattacharya (1979), Miller and Rock (1985), and John and Williams (1985) subsequently found evidence supporting Lintner's investigation. According to these theorists, changes in dividend policy signal a firm's future expectations, reflecting an anticipation of increased profitability, earnings, and growth rates. In this way, dividend policy serves to transmit information about future profitability, as managers possess superior knowledge of the firm relative to its investors. Nonetheless, managers often refrain from providing transparent information to shareholders due to the associated costs. A firm's dividend policy can efficiently serve as both an informational tool and a signal for future projections (Kulathunga & Azeez, 2016). Nevertheless, the question of whether dividend payments truly convey information about future earnings remains a contentious issue, with weak evidence supporting the central prediction of a positive relationship between changes in dividends and future earnings (Araujo, Moreira & Tsuchida, 2011). Additionally, empirical studies indicating a causal relationship between earnings and dividends have received certain criticism, which points to the fact that they are based on short time periods, thereby potentially misleading potential investors (Mtshali, 2016). Consequently, the idea that changes in dividends contain information about future earnings remains the prevailing wisdom in corporate finance (Benartzi, Michaely & Thaler 1997).

Research on dividend signalling has explored two core issues. The first pertains to whether share prices react correspondingly to dividend change announcements. The second revolves around whether dividend changes enable the market to predict future earnings. Despite extensive studies, the results have remained both mixed and inconclusive (Al Malkawi, 2005). The first issue has garnered significant attention because, if dividend change announcements fail to impact share prices as predicted, this casts doubt on the information content of the dividend hypothesis (Al Malkawi, 2005). Various studies have explored how the market responds to dividend announcements across different parts of the world, yielding conflicting results. While some research (Benartzi and al., 1997; Dharmarathne, 2013; Liu and Chi, 2014; Ngoc and Cuong, 2016; Ozo and Arun, 2019; Rosario and Chavali, 2016; Yvonne and Mukora, 2014) has demonstrated that stock prices react positively to dividend announcements, others (Kadioglu et al., 2015) have shown that the market reacts negatively to cash dividend disclosures. In contrast, some studies (Anwar et al., 2015; Asamoah, 2010; Patel and Prajapati, 2014; Legenzova et al., 2017; Uddin and Chowdhury, 2005) have indicated no significant abnormal returns following a dividend announcement, implying that such announcements do not influence share price behaviour, and investors cannot capitalise on them. This evidence aligns with Miller and Modigliani's (1961) dividend irrelevancy hypothesis.

Regarding the second issue concerning the relationship between dividends and future earnings, prior research has produced varying results. Some studies (Benartzi et al., 1997; Brav et al., 2005; Fukuda, 2000; Grullon et al., 2005; Mtshali, 2016) have found no support for the signalling theory, asserting that dividends relate to past and present earnings rather than conveying information about future earnings changes. In contrast, others (Ham, Kaplan, and Leary, 2020; Healy and Palepu, 1988; Lai et al., 2017; Lin et al., 2014) have reported a positive relationship, suggesting that dividend changes encompass information about highly persistent future economic income changes. This implies that dividend increases or decreases are followed by persistent high or low unexpected earnings.

Another area of study delves into the relationship between both forms of payout—namely, dividends and share repurchases—and future earnings. Dedman et al., (2014) propose that regular dividends are used to distribute recurring cash flows, while share buybacks are employed for transient excess cash. Consequently, regular dividends ought to exhibit a stronger positive association with firm value or future earnings than share repurchases. Supporting this argument, Dedman et al., (2014) demonstrated that regular dividends are strongly positively associated with future earnings, while share buybacks display a weaker connection with future earnings. Conversely, in Taiwan, Lai et al., (2017) discovered that share repurchases bear a

negative but insignificant association with future earnings, while cash dividends significantly impact future profitability. However, the authors also observed that substantial share repurchases do not influence future earnings, highlighting that of the two payout forms, dividends signal future earnings more effectively than share repurchases. In South Africa, Mtshali (2016) found that dividends cannot predict changes in earnings but that share repurchases serve as a good predictor of future earnings.

In summary, the signalling theory posits that dividends can be employed as a signal of a company's future performance and emphasises dividends' role in conveying information about a company's future prospects to the market. It also suggests that dividends can mitigate the agency problem by reducing management's incentive to engage in activities that do not benefit shareholders.

In conclusion, the dividend puzzle has confounded scholars for decades, leaving the question of why firms pay dividends unanswered. However, the publication of the dividend irrelevance theory by M&M prompted scholars to relax the perfect market assumptions and led to the emergence of various dividend theories. These theories include the signalling theory, free cash flow theory, life cycle theory, and agency theory. Nevertheless, empirical evidence on these main dividend theories remains mixed. The variance in results can be attributed to differences in time periods, methodologies, and variables used by different researchers, as well as the availability of new data sources over time (Baker & Weigand, 2015).

2.1.3 Institutional factors and dividend policy

The robustness of institutions is widely recognised as a key determinant shaping a firm’s dividend policy. There are two fundamental explanations for the impact of institutions on dividend policy. Firstly, when institutions exhibit strength, there tends to be a positive effect on firm performance, consequently influencing a firm's earnings as a pivotal determinant in the decision-making process regarding dividend distribution. Secondly, the potency of institutions has the potential to sway a firm's agency costs, thereby exerting an indirect influence on dividend policy. Institutions, encompassing cognitive, normative, and regulative elements, provide the framework that imparts stability and significance to social conduct. Moreover, within a robust institutional framework, elevated levels of investor protection and shareholder rights prevail, creating an environment that exerts greater pressure on corporations to distribute dividends. This arises from the enhanced confidence investors possess in a company's capacity to dispense dividends consistently, thereby rendering the company a more attractive investment option. Additionally, corporations functioning within a robust institutional context are more

likely to avail themselves of capital markets, enabling dividend disbursement even in instances of limited positive cash flow.

Similarly, Dawson (1998) posits two arguments detailing how institutions impact firms. The first underscores the institutions' role in augmenting firms' growth by fostering increased investments. The second argument highlights institutions' influence on the overall factor of productivity. On a similar note, Besley (1995) presents three explanations elucidating the relationship between institutions and investment. Firstly, secured property rights can shield investments from state or individual expropriation. Secondly, favourable institutional frameworks governing credit markets and contract enforcement can dismantle barriers obstructing essential financial and contractual arrangements required for investments. Thirdly, institutions facilitating economic transactions between individuals and firms amplify the gains from trade, consequently enhancing the potential return on investment. Consequently, a surge in firm investments is likely to translate into enhanced firm profitability, subsequently driving higher dividend payouts. Furthermore, Tunyi et al., (2019) underscore the direct influence of improvements in the institutional environment at the country level on aggregate firm performance and the individual performance of firms. This stems from the fact that the quality of national governance moderates the nexus between capabilities and performance, thereby augmenting the conversion of growth prospects into profitability. Hence, robust institutions have the potential to bolster firm profitability, subsequently paving the way for increased dividend distribution. However, as noted by Williamson (2000), differences in institutional quality across countries engender heterogeneity in organisational forms and practices. As a result, institutional attributes are likely to exert disparate influences on payout policy. Notably, this study exclusively delves into the literature about institutional facets encompassing investor protection, property rights, press freedom, corruption, and financial development, aligning with prior research.

2.1.3.1 Investor protection and dividend policy

The impact of investor protection strength on dividend payout policy is a topic of significant consideration. Investor protection, as defined by Defond and Hung (2004), is the extent of the laws that protect investors' rights and the strength of the legal institutions that facilitate law enforcement. Put simply, it aims to shield the interests of investors' securities, acting as a form of assurance against potential losses due to fraud or other illicit activities. This safeguard becomes crucial in contexts where the expropriation of minority shareholders and creditors by controlling entities, often observed in emerging economies, is prevalent. In such cases, insiders, including managing shareholders and managers, may prioritise personal gain over investor returns. Thus, the quality of country-level investor protection emerges as a pivotal aspect of a firm's internal governance (Faruq et al., 2013), potentially bolstering firm-level governance. Robust investor protection establishes an environment that discourages opportunistic behaviour by managers, reduces mismanagement risks, and fosters shareholders' confidence and willingness to engage in capital markets (Defond & Hung, 2004). Consequently, robust investor protection laws correlate with reduced agency costs and enhanced firm performance, leading to elevated dividend distributions (Adjaoud and Ben-Amar, 2010; La Porta et al., 2000; Athari et al., 2016). Furthermore, an effective legal system capable of upholding investors' rights (e.g., voting rights) and creditors' rights (e.g., liquidation rights) fosters investor and creditor willingness to fund firms (De Vita et al., 2020). This facilitates firm growth, increased profits, and improved free cash flow. The latter, as predicted by the agency cost theory, may lead to a necessity for dividend payments to mitigate agency costs.

Existing literature underscores the variability of investor protection strength across different legal systems (La Porta et al., 2008; La Porta et al., 2000). Effective legal systems empower external shareholders to elect directors favouring higher dividend distributions, initiating legal actions against excessive managerial compensation, and potentially influencing takeovers to direct firms to distribute cash. In this context, dividends are likely to be higher under effective legal systems. Watson (1974) reveals two primary legal traditions—common law (English origin) and civil law (Roman origin)—with common law more prevalent in commonwealth countries and civil law dominant in continental Europe and the regions it influences. Notably, La Porta et al., (1998) indicate that common-law countries typically exhibit stronger legal protections for investors, while French civil-law countries tend to have weaker protections, with German and Scandinavian civil-law countries falling in between. While commonwealth countries often have stronger investor protection, exceptions like

Zambia and Nigeria, despite being common law countries, exhibit weak investor protection akin to civil law countries (Hearn & Filatotchev, 2019).

The theoretical nexus between investor protection and dividend policy is proposed by La Porta et al., (2000). The authors posit those cross-country discrepancies in dividend policies and firms' financing access stem from the extent to which investors—both shareholders and creditors—are shielded from expropriation by managers and controlling shareholders. This delineates two agency models, namely: the outcome and the substitute models. The outcome model asserts that dividend payments arise from the legal protection of minority shareholders, while the substitute model suggests that dividends serve as substitutes for weak shareholder protection. The outcome model predicts that all else being equal, dividend payout increases with the strength of investor rights, as better-protected investors can compel insiders to pay dividends to curb agency costs. On the other hand, the substitute model posits that dividend payout diminishes with the strength of shareholder rights, implying that firms in financially constrained, where poorly governed contexts may pay large dividends to enhance their reputation for external finance. Conversely, well-governed firms, presumed to be less financially constrained, tend to offer lower dividends (O'Connor, 2013). This dichotomy underscores the complex interplay between investor protection and dividend policy.

Empirical evidence substantiates the idea that dividends are an outcome of investor protection, implying a positive association between investor protection and dividend policy. For instance, La Porta et al., (2000) were pioneers in confirming that firms in common-law countries tend to offer higher dividends when compared to those in civil-law countries. Their findings overall suggest a positive correlation between the strength of investor protection and dividend payouts. Similarly, Dittmar et al., (2003) discovered that corporations in countries with limited protection for shareholders' rights tend to hold up to twice as much cash as those in countries with robust shareholder protection. This supports the notion that in countries with weak shareholder protection, firms are less inclined to distribute dividends. Lin (2002) conducted tests across eleven Pacific countries to discover evidence in support of the outcome model, indicating that firms operating in countries with stronger shareholder protection exhibit higher, more stable, and less earnings-sensitive dividend policies. In a similar vein, Brockman, and Unlu (2009) delved into the impact of creditor rights on dividend payout ratios. They concluded that a reduction in the creditor rights index significantly reduces the likelihood of paying dividends by 41% and decreases dividend payout ratios by 60%, suggesting that countries with poor creditor rights witness significantly lower dividend payouts. Similarly, Adjaoud and Ben-Amar (2010) conducted research in Canada, affirming the outcome model

by demonstrating that firms with stronger corporate governance tend to offer higher dividend payouts. Goyal and Muckley (2013), in their study of Asian firms located in high investor protection common law countries, found a greater tendency to pay dividends, noting that when they do, they pay out more. Likewise, Agrawal (2013) studied the effects of state investor protection laws in the United States, showing that firms respond to the introduction of such laws by increasing dividends, raising equity, and growing in size, thereby confirming that dividends are indeed influenced by investor protection. Additionally, Athari et al., (2016) explored the dividend policy of Islamic and conventional banks in Arab markets, finding that conventional banks, operating in a more competitive environment with fewer agency problems, follow the outcome model of dividends by increasing dividends with stronger minority investor protection. O'Connor (2013) examined the relationship between creditor rights, legal enforcement, corporate governance, and corporate dividend payout in emerging markets, revealing that the outcome model holds when creditor rights' legal enforcement is strong.

In summary, the literature suggests that strong investor protection tends to reduce agency costs, discourage misappropriation of resources, and, as a result, lead to higher dividend payments. Additionally, better-protected investors may demand dividends to mitigate agency costs. In contrast, weaker investor protection may lead to higher resource misappropriation, resulting in lower dividend payments.

However, in contrast to findings supporting the outcome model, there exists a body of research that supports the substitute model, which posits a negative relationship between investor protection strength and dividend policy. For instance, John and Knyazeva (2006) demonstrated that firms with strong governance, perceived to have lower agency conflicts, tend to offer lower dividend payouts. This suggests that in environments with robust investor protection, agency costs may be lower, rendering dividends less relevant. Similarly, Jiraporn and Ning (2006) in the US found an inverse association between dividend payouts and shareholder rights, indicating that firms pay higher dividends where shareholder rights are more restricted and likely to secure capital at lower costs. Chae et al., (2009) explored the link between corporate governance and payout policy, suggesting that the relationship is contingent on the balance between agency problems and external financing constraints. When external financing constraints are binding, firms with strong corporate governance may opt to retain cash to reduce external financing costs, despite higher agency costs, thereby supporting the substitute model. John et al., (2015) indicate that firms with weaker monitoring mechanisms allocate a larger proportion of payouts to regular cash dividends, further endorsing the

substitute hypothesis. In Europe, Burns et al., (2015) found that firms in countries with weak investor protection tend to offer higher dividends, ostensibly to establish a reputation for distributing excess cash flows.

Contrary to the studies supporting either the outcome or substitute model, some research suggests that changes in investor protection have little effect on dividend policy. Moortgat et al., (2017) investigated the impact of investor protection and taxation legislation on dividend policy in the Brussels Stock Exchange from 1838 to 2012. Surprisingly, they found no evidence that changes in the legal environment significantly affected the dividend policies of listed Belgian firms over this period. These findings challenge the predictions of both the outcome and substitute models.

In summarizing, the discourse emphasizes the pivotal role of investor protection strength as a fundamental determinant of dividend policy. However, it's evident from existing research that the relationship between investor protection and dividend policy can unfold in diverse ways. Firstly, changes in investor protection may not exert a significant impact on dividend policy, suggesting a nuanced connection between the two. Secondly, firms operating in robust shareholder protection environments tend to exhibit higher dividend payouts, aligning with the outcome model and implying a positive relationship. Thirdly, in weaker investor protection contexts, firms may opt for elevated dividend payouts, in line with the substitute model, indicating a negative relationship between investor protection and dividend policy.

As this study delves into the effects of investor protection on the dividend policy of African firms, it's essential to acknowledge the distinctive context in which these studies are conducted. African markets present unique institutional landscapes characterized by varying levels of investor protection, regulatory frameworks, and economic conditions. These contextual intricacies may introduce different dynamics that shape the relationship between investor protection and dividend policy compared to studies conducted in other regions. Through this study focusing on African firms, the study aims to offer fresh insights into how investor protection, within the African context, influences dividend policy decisions. By comprehensively analysing these contextual nuances, the research endeavours to contribute novel perspectives to the broader discourse on investor protection and dividend policy, thereby enriching the understanding of corporate finance dynamics in African markets.

2.1.3.2 Property rights and dividend policy

The importance of property rights as a critical institution for firm growth has been underscored in academic literature (See Acemoglu et al., 2002; Anyanwu, 2014; Dang, 2012; Estrin & Prevezer, 2011; Ghoul et al., 2017; Knack & Keefer, 1995; Mijiyawa, 2008; Munisi et al., 2014; North, 1990). Protection of property rights can influence dividend policy in various ways. Firstly, robust property rights instil investors with confidence in the security of their investments, encouraging long-term investment and potentially resulting in high firm performance and increased profits. Increased profits can lead to agency costs, and under agency theory, firms may increase dividends to mitigate these costs. Moreover, in countries with secure property rights, firms may allocate resources more efficiently, facilitating faster growth as returns on various assets are better protected against competitors' actions (Claessens & Laeven, 2003). Conversely, weak property rights, which are prevalent in many emerging and African markets, can make investors more cautious, and less likely to invest in a company. This lack of investment can hinder company growth and profitability, potentially prompting a more conservative dividend policy or reduced dividend payments. In such cases, it may be more practical for a firm to reinvest retained earnings rather than pay dividends (Macours et al., 2010). In addition, the insecurity of property rights in developing markets can result in high efficiency and equity costs for firms (Munisi et al., 2014). In the same vein, Munisi et al., (2014) suggest that inadequate institutional settings, such as property rights and legal protection of equity and debt holders, have made African countries less attractive to investors. Therefore, insecure property rights could lead to lower dividend payments.

Secondly, property rights can impact dividend policy by influencing agency costs. For instance, Bhaumik et al., (2019) note that property rights can affect the dispersion of ownership and the nature of agency problems within firms (principal-agent vs. principal-principal). Weak property rights can increase the risk of expropriation by both managers and the state. Similarly, Estrin and Prevezer (2011) suggest that a lack of secure property rights heightens the threat of expropriation, which could lead to lower profits and, consequently, lower dividends. Previous studies have shown that investor protection laws and property rights enforcement can affect firm dividend policies (Gul et al., 2015). Research indicates that property rights indeed influence a firm's financing policies. For instance, North (1990) suggests that investment in certain asset types is higher when property rights are well protected. Hasan et al., (2014) find that property rights have a more pronounced positive effect on firm performance for firms with higher managerial entrenchment. Similarly, Acemoglu et al., (2002) find that weak property rights discourage firms from reinvesting their profits, hindering growth. Low profits and

growth can lead to reduced dividend payments. Johnson, McMillan, and Woodruff (2002) find that weaker property rights discourage the reinvestment of firm earnings, even when bank loans are available, suggesting that secure property rights are both necessary and sufficient for entrepreneurial investment. Furthermore, Buchanan et al., (2012) argue that secure property rights, through legal enforcement and the strength of legal claims, are essential to attracting potential foreign investors. A lack of investment may result in a firm having less capital for growth, potentially leading to earnings retention and fewer dividends. This suggests that there could be a positive relationship between the strength of property rights and dividend payments. However, following the substitute model by La Porta et al., (2000), firms in a weak property rights environment may pay higher dividends to establish a reputation if they seek access to cheap finance. Conversely, when property rights are strong, they may minimise agency costs, making dividends irrelevant. This supports the view of Desai et al., (2007), who document that American conglomerates use dividends to avoid the agency costs of free cash in foreign affiliations with weak property rights, suggesting that dividends serve as a substitute for weaker property rights. This leads to the conclusion that the strength of property rights could be negatively related to dividend payments.

Property rights have also been shown to reduce corruption, which, in turn, can influence firm performance and dividend policy. For example, Driffield et al., (2016) note that effective institutions protect property rights and facilitate contract enforcement, reducing transaction costs such as agency costs, information asymmetries, compliance costs, investment risk, and contracting costs. Reduced corruption has been linked to better firm performance (See Athanasouli et al., 2012; Donadelli et al., 2014; Hanousek and Kochanova, 2016), potentially leading to free cash flow, which may necessitate dividend payments. This suggests a positive relationship between the strength of property rights and dividend policy.

In summary, the relationship between property rights and dividend policy is multifaceted, capable of manifesting in various ways. Property rights may exert both positive and negative influences on dividend policy, depending on the specific context and conditions under which the studies were conducted. As this study investigates the effects of property rights on the dividend policy of African firms, it's crucial to acknowledge the unique contextual factors prevalent in African markets. Africa's institutional landscape, characterized by varying degrees of property rights enforcement, economic development levels, and regulatory frameworks, introduces distinct dynamics that may shape the relationship between property rights and dividend policy differently compared to studies conducted in other regions. By focusing on African firms, this study seeks to provide novel insights into how property rights,

within the African context, impact dividend policy decisions. Through a comprehensive analysis of these contextual nuances, the research aims to contribute valuable perspectives to the broader discourse on property rights and dividend policy, offering fresh insights and enriching the understanding of corporate finance dynamics in African markets.

2.1.3.3 Press freedom and dividend policy

Freedom, whether political, civil, or economic, makes up what economists refer to as the "institutions" of an economy (Dawson, 1998). Press freedom is an example of a political institution and plays a pivotal role in an economy. According to Guedhami et al., (2017), political freedom has a more pronounced impact on corporate payouts than other country-level institutions such as economic freedom, economic growth, legal protection, and financial market development. Therefore, as press freedom is an indicator of political freedom, it is likely to influence dividend policy. Recent statistics indicate that in the year 2014, 61 countries experienced a deterioration in freedom, while only 33 showed improvements (Guedhami et al., 2017). Despite such patterns, international corporate finance research has paid little attention to the implications of weak press freedom for corporate decisions. Consequently, the effect of press freedom on corporate dividend policy is not immediately clear.

A high degree of press freedom is often associated with lower corruption (Dutta & Roy, 2016), better corporate governance (Almaskati et al., 2020), increased investment, and economic growth (Alam & Ali Shah, 2013). These factors can influence agency problems and, by extension, dividend policy. Press freedom can also affect a company's ability to access capital markets. In countries with strong press freedom, companies are more likely to have access to capital markets, enabling them to pay dividends even when they are not generating positive cash flow. Therefore, press freedom can lead to higher firm performance, resulting in more free cash flow, and potentially higher agency costs. In such cases, firms may choose to pay greater dividends to mitigate these agency costs.

Conversely, lower press freedom may be associated with higher costs of external financing, worsening information acquisition by creditors (Qi et al., 2010), and a less stable economic environment (Boubakri et al., 2013). In this context, agency conflicts are likely to be higher, and earnings lower, leading to lower dividend payments. Furthermore, low press freedom can hinder a firm's expected investment prospects, potentially causing it to pay fewer dividends. Press freedom can also reduce information asymmetry between principals and agents. High press freedom can help reduce information asymmetries in the principal-agent framework (Kalenborn and Lessmann, 2013). This reduction in information asymmetry may

alleviate the need for firms to pay dividends, suggesting a negative relationship between press freedom and dividend policy. Press freedom can also influence corporate governance positively by acting as an external control mechanism, leading to less misappropriation of resources (Aguilera et al., 2015). A study by Guedhami et al., (2017) found that political freedom is significantly negatively correlated with dividend payments and total payouts. This suggests that when a country experiences a major deterioration (improvement) in its freedom status, firms tend to pay out more (less) past excess cash, and the increase in payouts is more (less) correlated with future investment cuts. In other words, firms in countries with lower press freedom tend to pay out more dividends, indicating a less favourable investment environment.

In conclusion, the relationship between press freedom and dividend policy is indeed multifaceted, subject to various influencing factors. This relationship can exhibit both positive and negative correlations, contingent upon specific contextual circumstances and the interaction of agency issues, transparency levels, and governance mechanisms. Notably, Guedhami et al., (2017) suggest that political freedom and dividends may serve as substitutes in mitigating agency conflicts; however, they highlight that this relationship warrants further empirical exploration.

Embarking on a study of the effects of press freedom on the dividend policy of African firms requires recognizing the unique contextual backdrop within which these investigations take place. African markets present distinct socio-political environments, characterized by varying degrees of press freedom, governance structures, and regulatory frameworks. These contextual nuances may introduce different dynamics that shape the relationship between press freedom and dividend policy compared to studies conducted in other regions. This study, focusing on African firms, aims to provide fresh insights into how press freedom within the African context influences dividend policy decisions. By thoroughly examining these contextual intricacies, the research endeavours to offer novel perspectives to the broader discourse on press freedom and dividend policy, thereby enriching the understanding of corporate governance dynamics in African markets.

2.1.3.4 Corruption and dividend policy

Corruption, at its core, involves the misuse of power by public officials for personal gain. However, Lopatta et al., (2017) propose a broader definition that encompasses any form of payment or offering of value to secure an undue advantage in acquiring or retaining business. While corruption is illegal in formal institutional terms, in many developing economies, it becomes tolerable and socially accepted due to the imperfections inherent in their formal institutions. From this institutional perspective, corruption emerges due to these imperfections, creating an imbalance between formal and informal institutions. Furthermore, corruption tends to be more pronounced in developing countries, due to factors like low public sector wages and frequent changes in laws and regulations.

Extant literature indicates that corruption significantly influences dividend policy. For example, Yensu and Adusei (2016) establish a negative correlation between dividend payouts and corruption at the country level. Thus, countries characterised by high corruption levels tend to have lower dividend payouts. In theory, corruption's impact on dividend policy links closely to its effect on investment and firm performance. High levels of corruption typically deter investment, as investors are reluctant to engage in highly corrupt environments. This, in turn, increases the cost of capital, compelling firms to rely on internal financing for investments and subsequently reducing dividend payments. Corruption also raises the cost of capital, potentially leading to diminished profitability and lower dividend distributions.

Regarding corruption and firm performance, previous studies reveal mixed results, with most indicating a negative relationship. Corruption is often considered detrimental to investment (Dang, 2012) and leads to lower efficiency in investment (Mauro, 1995). Additionally, corruption is viewed as a tax, increasing business costs, and introducing unpredictability and unreliability. Thus, high corruption levels are likely to result in poor firm performance and lower dividend payments. Habib and Zurawicki (2002) demonstrate that foreign investors tend to avoid corrupt environments, reinforcing corruption's negative impact on investment and, by extension, profitability, and dividend payments. Furthermore, corruption introduces uncertainty, reducing a firm's incentives for long-term investments, which can negatively affect dividend policies.

Numerous studies have provided substantial evidence supporting the existence of a negative correlation between corruption and firm performance. For instance, the research by Garmaise and Liu (2005) demonstrates that corruption, quantified by the prevalence of dishonest managers, leads to diminished firm values and profits. This phenomenon aligns with signalling theory, where reduced profits typically result in decreased dividend payments. Correspondingly, Lee and Ng (2009) establish that corruption detrimentally affects firm value, primarily through decreased expected future cash flows, which proves to be a concept most directly reflected in firms' profitability projections, thus yielding significant economic ramifications for shareholder value. The adverse impact of high corruption on shareholder value implies diminished dividend payments due to reduced cash flow. Similarly, Athanasouli et al., (2012) unearth a correlation between both firm-level and contextual corruption and reduced firm sales, showcasing a robust negative link between firm corruption and growth. This sentiment is mirrored by Faruq et al., (2013), who unveil that poor bureaucratic quality and corruption curtail firm productivity, with corruption exerting a more pronounced detrimental influence. Subpar productivity tends to correspond with diminished profitability, ultimately leading to reduced dividend payments. Correspondingly, Donadelli et al., (2014) observe that enterprises operating in highly corrupt countries typically exhibit lackluster returns. The authors also spotlight the exacerbation of agency problems in corruption-sensitive sectors resulting in diminished dividend payments, due to constrained free cash flow and heightened agency issues. Similarly, Hanousek and Kochanova (2016) reveal the constraining impact of corruption on growth and development in countries with feeble policies and legal systems. Considering the above, if corruption indeed undermines firm performance, it logically follows that a negative correlation exists between corruption and dividend policy. This conjecture gains validation from Yensu and Adusei (2016), who substantiate the inverse relationship between dividend payout and corruption at the country level in Africa.

By way of contrast, an alternative perspective asserts a positive connection between corruption and firm performance. According to this viewpoint, corruption serves as a mechanism to ‘grease the wheels’, aiding in circumventing cumbersome bureaucratic barriers, inefficient public service provision, and rigidity, especially in countries plagued by weak and ineffective institutions. Hence, when institutional quality falters, corruption might act as a lubricant for bureaucracy, bolstering growth (De Vaal & Ebben, 2011). This stance aligns with the so-called "efficient grease thesis" (Kaufmann and Wei, 1999; Mawuli and Stinchfield, 2013), which supposes that corruption can alleviate the burdensome bureaucratic processes and

lengthy delays within settings featuring formal institutional flaws. Consequently, firms' payments to public officials in exchange for services enable them to navigate market failures stemming from institutional deficiencies. Thus, corruption at the national level can be construed as a catalyst for economic development (Huntington, 1968; Jian and Nie, 2014; Leff, 1964). Consequently, corruption's positive impact on firm performance arises from its compensatory effect for the consequences of inadequate institutional frameworks and/or weak adherence to the rule of law (Webb et al., 2009). This viewpoint garners support from various authors. Méon and Weill (2010), for instance, discern that corruption negatively impacts national efficiency under effective institutions, but that it yields a positive effect when institutions are deficient. This suggests that in environments with weak institutions, corruption may positively influence firm performance, while in robust institutional contexts, the relationship may be negative. Ayaydin and Hayaloglu (2014) also reveal a notably positive association between private firms' growth and corruption levels. With heightened sales and growth, firms often experience increased profitability and free cash flow, thereby necessitating greater dividends to mitigate agency costs linked to high corruption. This reinforces the notion of a potential positive correlation between corruption and dividend policy. Likewise, Jiang and Nie (2014) document that regional corruption in China corresponds to increased profitability among private firms, though not state-owned ones. Given that highly profitable firms often distribute substantial dividends, a positive connection between corruption and dividend policy is plausible. Similarly, Williams and Kedir (2016) unearth a positive impact of corruption on annual sales, employment, and productivity growth rates across 40 African countries, implying a potential positive link to dividend policy. Correspondingly, Williams et al., (2016) discover a positive relationship between bribery and firm performance as such aligning with agency cost theory and signalling theory enhanced firm performance due to corruption can translate to higher dividend payouts. In conclusion, the discourse implies a positive relationship between corruption and dividend policy in countries marked by feeble institutions, such as developing nations.

The third perspective contends that corruption does not significantly affect firm performance. Studies like Van Vu et al., (2018) and Lavallée and Roubaud (2011) find no substantial link between corruption and financial performance or firm output. Consequently, the relationship between corruption and dividend policy may not be straightforward.

In summary, the existing body of research highlights the nuanced nature of the relationship between corruption and firm performance, which in turn can influence dividend policy in various ways. This multifaceted relationship suggests that the impact of corruption on dividend policy may exhibit diverse facets. Delving into the study of the effects of corruption on the dividend policy of African firms requires acknowledging the distinct contextual factors prevalent in African markets. African economies often operate within complex socio-political landscapes, where corruption levels and institutional environments vary significantly across countries and regions. These contextual differences may yield unique dynamics in the relationship between corruption and firm performance, thereby shaping dividend policy decisions in distinctive ways compared to studies conducted in other global contexts. This research aims to contribute novel insights into how corruption influences dividend policy within the African context. By systematically analysing these contextual nuances, the study seeks to advance understanding of the interplay between corruption, firm performance, and dividend policy in African markets, thereby offering valuable contributions to the existing literature on corporate governance and financial decision-making in the African context.

2.1.3.5 Financial development and dividend policy

Financial development examines the growth, efficiency, and effectiveness of financial systems. It encompasses the depth, efficiency, and access to financial institutions and financial markets (See, Svirydzenka, 2016). Financial markets are primary sources of equity financing, whereas debt financing is predominantly facilitated by financial institutions. In most cases, companies in both developed and emerging markets use a combination of debt and equity financing to fund their investments. Financial development plays a pivotal role in shaping a firm's dividend policy. This influence arises from its significant impact on corporate financing strategies (Demirgüç-Kunt and Maksimovic, 1996) and broader economic growth (Beck & Levine, 2008). However, in many emerging economies characterised by underdeveloped stock markets, debt, and equity financing are considered alternative means by which to finance corporate investment (Demirgüç-Kunt and Levine, 1996). In contrast, African markets tend to rely more on debt finance. For example, Andrianaivo and Yartey (2010) suggest that most countries traditionally relied on the banking system but note that in recent times (until the outbreak of the global financial crisis), capital markets have gained prominence.

The development of financial institutions can significantly influence dividend policy through their role in providing finance. For instance, firms can secure capital from banks to fund their investments. The more a firm invests, the higher the likelihood of generating greater profits, which, in turn, can lead to higher dividend payments. Furthermore, in developing or transition economies, the financial system plays an even more crucial role, where firms in these regions depend more on external financing than those in developed economies (Oshikoya, 1994). Without a well-functioning financial system, it becomes challenging for firms to sell their products in foreign markets and import capital goods for investment and expansion (Dang, 2012). Moreover, funding shortages are common in developing countries, where banking systems often struggle to provide the necessary resources, and capital markets fail to offer the required funding in sufficient quantities. This situation often results in limited expansion and growth for firms (Glen and Pinto, 1995). Hence, financial institutions are indispensable for firm and industrial expansion (Demirgüç-Kunt & Maksimovic, 1998). On average, countries with more developed financial systems have experienced faster economic growth compared to those with less developed systems (King & Levine, 1993). Additionally, industrial sectors that heavily rely on external finance tend to expand more rapidly in countries with favourable financial markets (Rajan & Zingales, 1995). Therefore, the development of both the banking and stock markets can serve as valuable indicators of subsequent output growth (Levine & Zervos, 1998).

In conclusion, it can be argued that the development of financial institutions constitutes a significant determinant of dividend policy. In cases where financial institutions are less developed, firms may be less inclined to pay dividends. This suggests a positive relationship between the development of financial institutions and dividend policy. The improved access to external financing reduces the likelihood of having to forgo valuable investment opportunities due to a lack of suitable financing (Almaskati et al., 2020). Consequently, as financial institutions' systems develop, firms gain the resources needed for growth and increased profitability. This increase in firm profitability, in turn, ought to lead to higher dividend payments, further reinforcing the positive relationship between financial institutions' development and dividend policy. The impact of financial institution development on dividend policy can extend to agency costs. For example, Aivazian et al., (2003) propose that bank debt can alleviate moral hazard and agency problems. Thus, dividend importance may be diminished in bank-centric nations, as bank debt mitigates the need for dividend payments to fulfill agency-reduction functions (Aivazian et al., 2003, 2006). Similarly, dividend stability

might not be critical for firms reliant on bank debt due to enhanced bank monitoring (Dewenter and Warther, 1998). This implies that financial institution development and dividend policy could substitute for managing agency costs. However, this may not be the case for African banks, due to ineffective monitoring. For instance, Gwatidzo and Ojah (2013) suggest a lack of corporate governance culture in Africa's environment, limiting banks' scrutiny of borrowers' practices. Additionally, Abor and Fiador (2013) note the weaker institutional characteristics in African countries, including insufficient disclosure and transparency requirements, fragmented regulatory systems, and inadequate investor protection. La Porta et al., (1998) contend that limited transparency and weak investment protection in emerging markets amplify dividends' role as a reputation mechanism. Thus, as financial institutions, including banks, develop, deficient bank monitoring and high agency costs might persist, necessitating dividend payments.

Regarding development in financial markets, this can impact dividend policy by influencing investment. For example, Dang (2012) finds a strong correlation between financial market development and an economy's investment level. As stock markets mature, liquidity risks decrease, enabling efficient capital allocation for investment, and thereby fostering corporate activities and growth (Levine, 1997). Consequently, development in financial markets is likely to coincide with higher dividend payments. Additionally, the absence or illiquidity of stock markets limits risk diversification for investors and entrepreneurs (Demirgüç-Kunt and Maksimovic, 1994). Consequently, investors may demand a premium for acquiring company stock in illiquid markets. Consequently, underdeveloped stock markets can translate to lower firm performance, prompting reduced dividend payouts. Moreover, an underdeveloped stock market may constrain firms to a suboptimal financing structure, such as excessive reliance on expensive debt (Demirgüç-Kunt & Maksimovic, 1994). This could lead to reduced profitability, limited access to credit for new projects, and lower firm performance. Consequently, dividend payments might decrease. Additionally, firms in underdeveloped stock markets may favour overly risky projects due to conflicts of interest, potentially harming creditors and resource allocation (Demirgüç-Kunt & Maksimovic, 1994). The resultant heightened firm risk and agency conflicts may lead to reduced dividend payments, further underscoring the potential for underdeveloped stock markets to yield lower dividends.

The influence of the development of financial markets on dividend policy can extend to capital cost reduction. For instance, Demirgüç-Kunt and Maksimovic (1996) contend that improved access to a well-functioning stock market may affect debt-equity ratios by substituting debt with external equity, ultimately reducing the cost of capital. Consequently, enhanced financing conditions from developed financial markets can lead to improved financial performance and value (Almaskati et al., 2020), likely resulting in increased firm performance and subsequently higher dividend payments. However, this may not hold for emerging market firms. Despite the potential cost-effectiveness and reduced risk associated with developed stock markets, firms in such markets may still opt for expensive debt financing due to tight family ownership control (Demirgüç-Kunt and Maksimovic, 1996). This could raise the firm's cost of capital, diminishing profitability and dividend payments. Additionally, higher debt-equity ratios may elevate firm risk, leading to reduced dividends. For instance, John and Knyazeva (2006) observe a negative link between firm risk and dividend payout. Riskier firms might hesitate to pay larger dividends, as this could hinder their investment capacity, unlike safer firms (Michaely et al., 2021). In emerging markets, the development of stock markets could lead to heightened capital costs and risk, resulting in lower dividend payments. Conversely, in developed countries, the substitution of costly debt for equity finance due to stock market development could lower the cost of capital (Demirgüç-Kunt and Maksimovic, 1996), boosting firm profitability and necessitating higher dividend payments.

Furthermore, the impact of development in financial markets on dividend policy may relate to improved corporate governance, as stock markets disseminate information about firms and managers through published prices (Levine, 1997). Stock markets also facilitate information flow and enhance corporate governance (Demirgüç-Kunt and Maksimovic, 1996). Ho (2019) underscores how stock markets provide liquidity, reduce savings mobilisation costs, enhance corporate governance, and foster risk-sharing, all contributing to economic growth. Thus, with stock market development, agency conflicts, and information asymmetry tend to decrease. If dividends and stock market development substitute for managing agency conflicts, the latter's development may render dividends irrelevant in this context, implying lower dividend payments. However, if dividends and stock market development complement each other for addressing agency conflicts, as stock markets develop, firms may opt for higher dividends to curb agency problems, suggesting a positive link.

Moreover, stock markets can lower external debt and equity costs through improved information and reduced monitoring costs for investors and intermediaries (Demirgüç-Kunt & Maksimovic, 1996). This could enhance firm performance and, consequently, dividend payments. Additionally, robust development in financial markets may prompt firms to adopt stringent governance frameworks, thereby enhancing access to domestic capital markets, reducing agency conflicts, and resource misappropriation, and boosting dividend payments.

Overall, extant literature emphasises the significant impact of financial market development on long-term economic growth (Beck & Levine, 2008), indicating its likely influence on dividend policy. Similarly, Beck and Levine (2004) establish the substantial impact of the stock market and bank development on economic growth. Dang (2012) finds that financial market development significantly affects an economy's investment level, while greater investment tends to enhance profits and yield higher dividend payments. Therefore, financial development is likely to have a positive effect on dividend policy.

In summary, while the existing literature suggests a positive relationship between financial development and dividend policy, it is important to recognize the potential nuances that arise when considering the development of financial markets and institutions. These factors can exert varying influences on dividend policy, which may differ based on the specific context of African firms. Studying the effects of financial development, financial market development, and the development of financial institutions on the dividend policy of African firms necessitates acknowledging the unique characteristics of African financial systems. African economies often grapple with challenges such as limited access to financial services, underdeveloped capital markets, and varying degrees of regulatory frameworks across different countries. By exploring these factors within the African context, this study aims to shed light on how financial development, market dynamics, and institutional frameworks intersect to shape dividend policy decisions in African firms. Through an in-depth analysis of these contextual differences, the research seeks to offer fresh insights into the relationship between financial development and dividend policy, thereby contributing valuable knowledge to the literature on corporate finance and governance in African markets.

2.2 Hypothesis development

This section is organised into five distinct parts, aligning with our literature background and the primary objectives of the paper. The first subsection examines the impact of investor protection on dividend policy (Hypothesis 1). The second subsection delves into property rights and their influence on dividend policy (Hypothesis 2). The third subsection explores how press freedom can shape dividend policy (Hypothesis 3). The fourth sub-section investigates the relationship between corruption and dividend policy (Hypothesis 4). Lastly, the fifth subsection focuses on financial development and its effect on dividend policy (Hypothesis 5).

Scholarly literature has demonstrated that various institutional factors play a pivotal role in shaping a firm's dividend policy. Institutional theory suggests that a country's institutional framework facilitates investment by providing incentives, creating a stable environment, reducing transaction costs, and mitigating risk and uncertainty (Alam et al., 2019). Consequently, institutional factors are likely to exert a significant influence on corporate decisions. For instance, the quality of institutions promotes transparency, boosts investor confidence, facilitates the establishment of rules and regulations, and ensures effective oversight of global political, social, and economic activities (Manasseh et al., 2017).

Strong institutions thus support macroeconomic stability and social cohesion, enhancing market efficiency and business growth. Additionally, countries with well-developed institutional structures tend to have stock markets characterised by higher returns on equity and lower levels of risk (Hooper, Sim and Uppal, 2009), which can positively impact a firm's dividend policy. Furthermore, robust institutional settings confer competitive advantages upon firms, by reducing transaction costs and streamlining contract enforcement processes (Kafouros & Aliyev, 2016). A favourable legal environment protects potential financiers from expropriation by entrepreneurs, therein fostering their willingness to invest in exchange for securities and expanding the size of financial markets (Cherif & Dreger, 2016). This, in turn, can lead to a reduction in agency conflicts and potentially result in higher dividend payouts. Moreover, sound institutional quality can attract foreign investors, facilitate firms' access to external finance, and mitigate information opacity (Alam et al., 2019).

Given these arguments, it becomes evident that institutional factors are likely to affect dividend policy. Thus, we posit that dividend policy may be influenced by country-specific institutional factors encompassing investor protection, property rights, press freedom, corruption, and financial development. This is because these institutional factors can shape the information environment and agency costs, subsequently impacting dividend policy.

Therefore, in the presence of robust institutions characterised by strong investor protection, property rights, high press freedom, and developed financial markets, firms are inclined to pay generous dividends. Conversely, in settings with weak institutions marked by corruption, agency problems are likely to prevail, potentially leading to lower dividend payments. This leads to the following hypotheses:

H1: Dividend policy is influenced by institutional factors.

2.2.1 Hypothesis relating to investor protection and dividend policy

The first hypothesis directly addresses the connection between investor protection and dividends, primarily through the lens of agency cost theory. For instance, Ghosh and He (2015) provide empirical evidence suggesting that stronger investor protection curtails managerial opportunistic behaviour aimed at diverting cash flow for personal gain. Similarly, Xiao (2013) argues that legal safeguards for shareholders can alleviate agency conflicts, and address the issues of under and over-investment. Moreover, existing literature consistently highlights investor protection as a pivotal determinant of dividend policy (e.g., Alzahrani & Lasfer, 2012; Athari et al., 2016; Burns et al., 2015; Goyal & Muckley, 2013; La Porta et al., 2000; Mitton, 2004).

Theoretical explanations in this domain, as outlined by La Porta et al., (2000), present two contrasting agency views regarding the impact of investor protection on dividends, known as the substitute and outcome models. This study posits that the effects of investor protection on dividend policy align more closely with the predictions of the substitute model. According to the substitute model, dividends serve as a substitute for investor protection. The substitute model posits that dividend payout diminishes with the strength of shareholder rights. In weaker investor protection environments, firms tend to offer higher dividends to compensate for the deficiencies in investor safeguarding. Consequently, in emerging markets, the substitute model suggests that financially constrained and poorly governed firms may issue substantial dividends, aiming to enhance their reputation and potentially reduce their costs of external finance (Benos & Weisbach, 2004; LaRiviere, McMahon & Neilson, 2018). Conversely, well-governed firms, presumably facing fewer financial constraints, often pay lower dividends (O'Connor, 2013).

Africa's diverse legal and regulatory environments, combined with its mix of emerging and frontier markets, provide a unique context for examining the relationship between investor protection and dividend policy through the lens of agency cost theory. The continent's varying levels of investor protection, ranging from robust legal frameworks to evolving governance

structures, create a fertile ground for testing the substitute model, which posits that weaker investor protection leads firms to offer higher dividends to compensate for governance deficiencies. Empirical evidence from studies such as those by John and Knyazeva (2006), Jiraporn and Ning (2006), Chae et al., (2009), John et al., (2015), and Burns et al., (2015) supports the notion that firms in weak investor protection environments pay higher dividends in line with the substitute model, enriching the empirical support for agency cost theory. Considering the above, the study proposes the following hypothesis:

H1.1: Investor protection strength negatively influences dividend policy, consistent with the substitute model

2.2.2 Hypothesis relating to property rights and dividend policy

To support the second hypothesis of this study, which asserts a positive relationship between the strength of property rights and dividend policy, the study draws on agency theory and free cash flow theory.

Africa's diverse economic landscape, with its mix of emerging and frontier markets and varying levels of property rights protection, provides a unique context for examining the relationship between property rights and dividend policy through the lens of agency theory and the free cash flow hypothesis. In countries with robust property rights, managers are incentivized to advocate for dividend payments to mitigate agency costs and prevent resource misappropriation, as suggested by La Porta et al., (2000) outcome model. Strong property rights reduce agency costs and enhance managerial monitoring efficiency (Naceur et al., 2006), leading to improved firm performance and higher dividend distributions. Additionally, secure property rights facilitate efficient resource allocation and accelerated growth, as firms' returns are safeguarded against competitor actions (Claessens & Laeven, 2003). Enhanced investor confidence in such environments can attract more investment, whereas weak property rights may deter investors, making it difficult for firms to raise capital and grow, resulting in lower dividend payouts (Munisi et al., 2014). Empirical evidence supports the positive correlation between property rights strength and dividend policy.

Conversely, the free cash flow theory posits that weak property rights can lead to resource misappropriation and reduced profits, ultimately diminishing free cash flow and lowering dividends. The absence of secure property rights raises expropriation concerns (Estrin and Prevezer, 2011) and discourages firms from reinvesting profits, hindering growth potential (Acemoglu et al., 2002). Consequently, firms in such environments experience reduced free cash flow and lower dividend payments. Strong property rights, on the other hand, can reduce

corruption and transaction costs (Driffield et al., 2016), leading to improved firm performance. Studies indicate that low corruption is associated with increased firm performance and higher profits (Athanasouli et al., 2012; Donadelli et al., 2014; Hanousek and Kochanova, 2016). According to the free cash flow hypothesis, increased profits can trigger agency costs that necessitate dividend payments. Thus, the unique context of Africa, with its varying degrees of property rights protection, provides a fertile ground for validating the theory that strong property rights are positively linked to dividend payments, enriching the empirical support for both agency theory and the free cash flow hypothesis. Thus, it is plausible to suggest that the strength of property rights is positively linked to dividend payments, leading to the following hypothesis:

H1.2: Stronger property rights are positively associated with dividend payout policy.

2.2.3 Hypothesis relating to press freedom and dividend policy

Extant literature tends not to draw a connection between dividend policy and press freedom, where an attempt to bridge this gap can be found in a study by Guedhami et al., (2017), who explore the influence of political freedom on dividend policy, with press freedom serving as an indicator of political freedom. Considering this context, the current study endeavours to establish a hypothesis that positively correlates press freedom with dividends. Africa's diverse economic, political, and media landscapes provide a unique context for investigating the relationship between press freedom and dividend policy, drawing on theoretical frameworks such as agency cost theory and signalling theory. The continent's varied levels of press freedom, ranging from robust media environments to significant restrictions, create an ideal setting to hypothesize that greater press freedom positively correlates with dividend payouts. High press freedom is expected to stimulate investment, reduce capital costs, combat corruption, and enhance governance, thereby bolstering investor confidence in firms' dividend distribution capabilities.

From the perspective of agency cost theory, strong press freedom can mitigate agency costs by reducing corruption and improving corporate governance standards, ultimately leading to higher dividends. Research supports the notion that press freedom drives investment and economic growth (Alam and Ali Shah, 2013; Islam, 2002; Pal et al., 2011), potentially boosting firm profitability a crucial factor influencing dividend policy (Fama and French, 2001; Rakotomavo, 2012). Conversely, limited press freedom may increase the costs of external financing due to reduced transparency and information availability (Qi et al., 2010), potentially resulting in lower earnings and decreased dividend payments.

Signalling theory suggests that firms with higher press freedom can signal their reliability and transparency to investors more effectively, thereby attracting more investment and potentially leading to higher dividends. This theory posits that robust media environments act as credible sources of information, reducing information asymmetry between firms and investors and improving market efficiency (Dyck et al., 2008). Empirical evidence linking press freedom to enhanced firm-level governance supports this view, demonstrating that a free press contributes to transparency and monitoring effectiveness (Almaskati et al., 2020). Furthermore, a free press augments transparency, minimises information asymmetry, and bolsters monitoring efficacy. Almaskati et al., (2020) reinforce this connection by demonstrating a positive correlation between media strength, firm-level governance, and effectiveness. Thus, if a potent media is positively correlated with internal governance, it is possible to anticipate fewer agency conflicts in the presence of unfettered press freedom. Moreover, if press freedom and dividends work in tandem to alleviate agency conflicts, a positive relationship between press freedom and dividend policy can be anticipated. Consequently, it is possible to propose that in the context of robust press freedom, firms are more likely to distribute higher dividends.

In conclusion, exploring the African context with its diverse press freedom levels offers an opportunity to empirically validate the hypothesis that strong press freedom correlates positively with dividend payouts. This investigation enriches the empirical support for both agency cost theory and signalling theory, contributing to a deeper understanding of how media freedoms influence corporate financial policies in emerging and developing economies.

Based on the analysis provided above, the study proposes the following hypothesis:

H1.3: Press freedom is positively related to dividend policy

2.2.4 Hypothesis relating to corruption and dividend policy.

The unique context of Africa provides an insightful backdrop for exploring the relationship between corruption and dividend policy, aiming to validate this connection through empirical evidence. In this study, we posit that corruption and dividend policy are positively correlated, serving as alternative mechanisms to address agency conflicts within firms. Companies operating in corrupt nations often resort to engaging in higher levels of corruption to secure external financing on favourable terms, which is frequently accompanied by generous dividend distributions to bolster their reputations. Thus, we anticipate a positive relationship between corruption levels and dividends. This influence of corruption on dividend policy can be explained through two primary channels: its impact on agency costs and firm performance.

Agency cost theory provides a framework for understanding this relationship, particularly through La Porta et al., (2000) substitute model, which suggests that firms in corrupt environments pay higher dividends to compensate for weak institutional frameworks. Empirical literature supports this notion by highlighting corruption's potential positive effects on firm performance in regions with poor institutional quality, such as Africa. Studies by De Vaal and Ebben (2011), Méon and Weill (2010), and Jiang and Nie (2014) indicate that corruption can streamline bureaucratic processes, stimulate economic growth, and attract foreign direct investment (FDI). These factors contribute to enhanced firm performance, potentially leading to increased dividend payments.

Moreover, research suggests that corruption can positively impact annual sales, productivity, profitability, and overall growth (Williams and Kedir, 2016; Ayaydin and Hayaloglu, 2014; Goedhuys et al., 2016; Jiang and Nie, 2014). Increased profitability and growth generate higher free cash flows, which in turn may raise agency costs, necessitating higher dividend payouts to mitigate these costs effectively. Therefore, by exploring the African context with its unique challenges and opportunities related to corruption and institutional quality, this study aims to empirically validate the hypothesis that corruption positively influences dividend policy, contributing to a deeper understanding of corporate financial strategies in emerging markets.

Considering this discussion, a strong case can be made for a positive relationship between corruption and dividend policy. Consequently, to test these arguments, we formulate the following testable hypothesis:

H1.4: Corruption is positively and significantly related to dividend policy

2.2.5 Hypothesis relating to Financial Development and dividend policy.

The unique context of Africa presents an ideal setting to explore the relationship between financial development and dividend policy, seeking to validate this correlation through empirical evidence. This study posits a positive association between financial development and dividend policy, driven by key factors such as reduced capital costs, diminished agency conflicts, and increased firm investments (Bekaert and Harvey, 2003; Makina and Negash, 2005; Dang, 2012). Beck and Levine (2005) highlight that financial development not only fosters long-term economic growth but also enhances access to capital, stimulating company growth, profitability, and favourable dividend policies, ultimately leading to increased dividend payouts.

Financially developed environments play a crucial role in shaping dividend policy through interconnected channels. Enhanced access to capital from diverse domestic and international sources reduces capital costs and improves profitability for firms (Beck and Levine, 2004). This financial strength enables companies to manage their capital structures efficiently, facilitating higher dividend payouts as they allocate earnings to shareholders sustainably (Beck and Levine, 2005). Stronger corporate governance frameworks and investor protections associated with improved financial development mitigate agency conflicts between management and shareholders, fostering transparency and accountability in corporate practices (Demirguc-Kunt and Maksimovic, 1998). These improvements reassure investors and encourage firms to commit to regular dividend distributions, maintaining investor trust (La Porta et al., 2000).

Moreover, the availability of diverse funding options in developed financial markets facilitates increased investments in productive assets and market expansion initiatives (Demirguc-Kunt and Levine, 1996). This investment spurs revenue growth and profitability, generating higher free cash flows that can be distributed as dividends (Dang, 2012). Regular dividend payments signal a firm's financial health and stability, attracting a broader base of institutional and retail investors seeking stable income streams (Lintner, 1956). Additionally, legal and regulatory enhancements accompanying financial development enforce dividend commitments and enhance corporate accountability (Claessens and Laeven, 2003), ensuring firms adhere consistently to dividend policies.

Examining the African context with its varying levels of financial development and institutional quality aims to empirically validate the hypothesis that financial development positively influences dividend policy. This investigation contributes to a deeper understanding of corporate financial strategies in emerging markets and enriches the empirical support for theories linking financial development with dividend policy dynamics.

Assuming the coherence of the arguments above, this study proposes the following hypothesis:

H1.5a: Financial development is positively and significantly related to dividend payout policy

Financial development encompasses advancements in both financial institutions and financial markets.

This study argues that the development of financial institutions has a favourable impact on dividend policy. The unique context of Africa provides an ideal environment to explore the relationship between the development of financial institutions and dividend policy, aiming to validate this correlation through empirical evidence. As financial institutions evolve in Africa, firms benefit from increased access to crucial financing, which is particularly significant in economies heavily reliant on external funding (Oshikoya, 1994). This enhanced access not only supports business expansion and industrial growth but also has a profound impact on overall economic performance (Dang, 2012; King & Levine, 1993). Sectors dependent on external financing thrive particularly in countries with well-developed financial institutions, reducing the risk of missed investment opportunities due to funding constraints and potentially leading to higher dividend payouts (Almaskati et al., 2020).

Moreover, the development of financial institutions plays a pivotal role in shaping dividend policy through several critical channels. Firstly, improved access to capital from diverse domestic and international sources allows firms to manage their capital structures more efficiently, thereby reducing capital costs and enhancing profitability (Beck and Levine, 2004, 2005). This financial strength enables companies to allocate higher earnings to shareholders in the form of dividends. Secondly, enhanced financial development often strengthens corporate governance frameworks and investor protections, mitigating agency conflicts between management and shareholders (Demirguc-Kunt and Maksimovic, 1998; La Porta et al., 2000). These improvements foster transparency in corporate practices and boost investor confidence in the reliability of dividend distributions. Furthermore, well-developed financial institutions

provide firms with broader access to funding options, including debt and equity markets (Demirguc-Kunt and Levine, 1996). This facilitates increased investments in productive assets and expansion initiatives, which contribute to higher profitability and generate greater free cash flows available for dividends (Dang, 2012). Regular dividend payments serve as a signal of financial stability and attract a wider investor base seeking stable income streams (Lintner, 1956). Additionally, legal and regulatory enhancements accompanying financial development enforce dividend commitments and enhance corporate accountability (Claessens and Laeven, 2003), ensuring consistent adherence to dividend policies.

Moreover, in Africa, where institutional characteristics may be weaker compared to developed economies, the development of financial institutions becomes even more crucial. Weak institutions often necessitate higher dividend distributions as firms strive to enhance their reputation and attract investor confidence amidst governance challenges (Abor and Fiador, 2013; La Porta et al., 1998). This context underscores a positive correlation between financial institution development and dividend policy, highlighting how improved financial infrastructure supports sustainable corporate financial strategies and enhances shareholder value in emerging markets. By examining these dynamics in Africa, this study aims to contribute empirical evidence that enriches our understanding of how financial institution development influences dividend policy. These insights not only advance theoretical frameworks in finance and economic development but also provide practical implications for policymakers and corporate leaders seeking to foster robust financial institutions and investor-friendly environments in emerging economies.

Thus, based on these arguments, we formulate the following hypothesis:

H1.5b: Financial institutions' development is positively associated with dividend policy

We posit a positive relationship between the development of financial markets and dividend policy. The unique context of Africa provides an ideal environment to investigate the relationship between financial market development and dividend policy, crucial for empirical validation. As financial markets evolve across the continent, they play a pivotal role in enhancing capital allocation efficiency for corporate growth (Levine, 1997). This efficiency improvement allows firms to better allocate earnings to shareholders, potentially resulting in increased dividend payouts. Moreover, the development of financial markets in Africa reduces capital costs by facilitating the substitution of debt with equity, thereby improving funding

conditions and overall financial performance (Demirgüç-Kunt and Maksimovic, 1996; Almaskati et al., 2020).

Additionally, the growth of stock markets in Africa contributes significantly to enhancing corporate governance practices. Stock markets provide market-driven information through stock prices (Levine, 1997), which enhances transparency, reduces agency conflicts, and addresses information asymmetry between management and shareholders. This alignment with agency cost theory supports the notion of increased dividend distributions as firms operate more efficiently and transparently. Furthermore, by offering liquidity and facilitating risk-sharing among investors (Ho, 2019), stock markets contribute to reducing agency costs and potentially lead to higher dividends.

Furthermore, the robust development of financial markets in Africa decreases the costs associated with external financing, including both debt and equity. This is achieved by providing better information and lowering monitoring costs for investors and financial intermediaries (Demirgüç-Kunt and Maksimovic, 1996). The resulting improved firm performance supports higher dividend payments as firms become more profitable and generate greater cash flows available for distribution. Moreover, stringent governance frameworks adopted in response to market pressures enhance access to domestic capital markets, reduce agency conflicts, and ensure firm resources are protected from misuse (Almaskati et al., 2020).

In summary, the development of financial markets in Africa positively influences dividend policy through multiple interrelated channels: enhanced capital allocation efficiency, reduced financing costs, improved governance practices, market-driven transparency, and regulatory compliance (Demirgüç-Kunt and Levine, 1996; Beck and Levine, 2004; Dang, 2012; La Porta et al., 2000; Lintner, 1956; Claessens and Laeven, 2003). These factors collectively create an environment conducive for firms to adopt sustainable dividend policies that enhance shareholder value and promote economic stability in the region. Exploring the development of financial markets in Africa provides empirical validation for the theory that such progress positively impacts dividend policy, reinforcing the attractiveness of the region to both domestic and international investors.

Consequently, the study formulates and assesses the following hypothesis:

H1.5c: Financial market development is significantly positively associated with dividend policy.

2.3 Data and research design

2.3.1 Data and Sampling

When studying dividend policy, Baker and Weigand (2015) highlight that researchers generally rely on two primary approaches. The first approach involves statistical analysis of published financial data, while the second approach employs a survey methodology. This study opts for the first approach. The firm-specific data is sourced from the Bloomberg financial database, covering non-financial firms listed on various African stock exchanges. The dependent and independent variables related to firms are computed from the income statement, balance sheet, and cash flow statement items of the sampled companies. Data collection spans from 2006 to 2020 inclusively. This time frame is chosen primarily because it encompasses multiple economic cycles, capturing both periods of growth and recession. Additionally, country-level data for the relevant variables is available within this timeframe. All variables are winsorised at the 5th and 95th percentiles to minimise the effects of outliers. The World Bank's Governance Indicators database and the annual Freedom of the Press report provide data on institutional variables. In cases of missing data for country-level governance indicators, we employ cubic spline interpolation, following the methodology of Benavides et al., (2016) and Voutsinas et al., (2018). This involves averaging neighbouring years' data and subsequently dividing by two.

This thesis delves into a comprehensive sample, comprising 357 non-financial listed firms originating from thirteen African stock markets, covering the years 2006 to 2020. The study is focused on non-financial entities, specifically excluding financial companies and utilities, in alignment with existing literature (e.g., Adaoglu, 2000; De Cesari & Ozkan, 2015; Ha et al., 2017). Regional stock markets are also omitted from the sample, given that the analysis is based on country-level data. The study encompasses both dividend-paying and non-dividend-paying firms, as excluding the latter has been found to introduce a well-documented selection bias problem (Allen et al., 2000; Nnadi et al., 2013). For an overview of the sample distribution, refer to Table 2.1.

Table 2.1 Sample distribution

Country	Number of firms	% of Sample
Botswana	5	1,40
Egypt	62	17,37
Ghana	12	3,36
Kenya	18	5,04
Mauritius	15	4,20
Morocco	29	8,12
Namibia	15	4,20
Nigeria	39	10,92
South Africa	132	36,97
Tanzania	6	1,68
Tunisia	13	3,64
Uganda	5	1,40
Zambia	6	1,68
13 stock Markets	**357**	**100**

2.3.2 Measurement of variables

2.3.2.1 Measurement of Dividend Policy

When modelling dividend policy, researchers frequently investigate two dimensions: (i) the determination of whether to distribute dividends or not; and (ii) the magnitude of the dividend payment, known as the dividend payout ratio. This study concentrates on the latter aspect, specifically examining the dividend payout ratio denoted as *DPR*. The dividend payout ratio is gauged through two variables: (1) dividends to assets (*DIVASSETS*) (Boţoc and Pirtea, 2014; Burns et al., 2015); and (2) dividends to total sales (*DIVSALE*S) (Gonzalez et al., 2017). Data concerning the payout ratios are sourced from Bloomberg. These metrics are chosen due to their prevalence in dividend policy research. Notably, *DIVASSETS* are adopted as these are widely used in numerous studies and mitigate concerns related to pricing and earnings volatility (Boţoc & Pirtea, 2014). The dividends to assets ratio adjust for differences in firm size, providing a standardized measure that facilitates comparisons across companies of varying scales (La Porta et al., 2000). It can indicate how effectively a firm utilizes its assets to generate returns for shareholders, offering insights into financial stability and capital allocation efficiency (Fama & French, 2001). By tying dividend payouts to the overall asset management strategy, it helps assess the company's strategic use of resources (Baker & Wurgler, 2004). However, firms with high levels of intangible or non-productive assets might appear less efficient in dividend distribution, potentially skewing comparisons (Brown & Caylor, 2006). Companies undergoing significant capital investments may show distorted payout ratios, as the asset base increases without immediate corresponding revenue generation (Damodaran, 2012).

Differences in asset valuation practices across companies and countries can also affect the comparability and reliability of the ratio (Basu, 1997). Despite these challenges, the dividends to assets ratio remains a valuable measure in financial analysis and modelling dividend policy. Its ability to standardize comparisons across firms and provide insights into asset utilization and strategic management makes it commonly used in assessing dividend distribution practices and overall financial health.

Conversely, DIVSALES is employed as a supplementary validation. Despite being less optimal due to the limited reflection of a firm's actual earnings condition (Breuer et al., 2014), it offers robustness. The dividends to sales ratio directly relate dividend payments to the revenue generated by the company, providing insights into the company's dividend policy relative to its income (Miller & Modigliani, 1961). It can highlight how effectively a company converts its sales into returns for shareholders, indicating operational efficiency in dividend distribution (Baker & Powell, 2012). Additionally, it facilitates comparisons across firms within the same industry based on their revenue generation capabilities (Damodaran, 2012). However, companies with different profit margins may have varying dividend to sales ratios, making direct comparisons challenging (Asquith & Mullins, 1986). Non-recurring or extraordinary items in sales figures can distort the ratio, affecting its reliability as a long-term dividend policy indicator (Damodaran, 2012). Moreover, the ratio may not capture the full picture of a company's financial health and dividend policy, as it focuses solely on the relationship between dividends and sales (Miller & Modigliani, 1961). Despite these limitations, the dividends to sales ratio remains a widely used measure in modelling dividend policy. Its direct linkage of dividends to revenue provides a clear indicator of a company's income distribution strategy, aiding in industry comparisons and evaluating operational efficiency. This makes it a valuable tool in financial analysis despite its challenges in certain contexts.

2.3.2.2 Measurement of Investor Protection

The study quantifies investor protection using a metric known as the Investor Protection Index (*INVPRO*), focusing on minority shareholder rights. This index evaluates the extent to which shareholders can safeguard themselves against any misuse of corporate assets by management and directors for personal gain. The index is composed of three key attributes that collectively reflect investor protection: (i) the shareholder's capacity to legally pursue officers and directors in cases of misconduct (*ShInd*); (ii) the accountability of directors for instances of self-dealing (*DirLia*); and (iii) the transparency of related-party transactions through disclosure (*DisInd*) (Goyal & Muckley, 2013; Athari et a., 2016). Consequently, the Investor

Protection Index is computed by equally weighing *ShInd*, *DirLia*, and *DisInd* for each country on an annual basis. This index ranges from 0 to 100, with higher values signifying more robust investor protection. This measure holds an advantage over that of other indices, as it offers relatively objective benchmarks for assessing the regulatory framework and enforcement of protections for minority shareholders (Goyal & Muckley, 2013). The data on investor protection is sourced from the World Bank Governance Indicators, which compiles insights on governance quality from a wide range of enterprises, citizens, and experts in both advanced and developing countries (Donadelli et al., 2014)

2.3.2.3 Measurement of property rights

The study assesses property rights using the Property Rights index (*PR*), as outlined by Ghoul et al., (2017) and Machokoto et al., (2021). For this purpose, it relies on data from the Economic Freedom of the World (EFW) report produced by the Fraser Institute. The EFW's assessment of the Legal System & Property Rights gauges the legal system's quality by considering factors such as protection of property rights. The Property Rights Index is scored on a scale from 0 to 10, where higher values indicate more effective property rights enforcement.

2.3.2.4 Measurement of corruption

The study gauges corruption using the World Bank's Control of Corruption Index (*CCI*), which mirrors the perceived extent to which public power is exploited for personal gain, encompassing both minor and major instances of corruption, along with the influence of elites and private interests on the state. The *CCI* is graded on a scale of approximately -2.5 (indicating weak control and high corruption) to 2.5 (indicating strong control and low corruption). A notable advantage of this index is its incorporation of both public and private perceptions of corruption within a country (Burns, Kapalczynski & Wald, 2021). Furthermore, the World Bank Index is preferable, due to its reliance on a broader array of corruption perception surveys compared to Transparency International data (Bohara et al., 2004). However, some studies opt for the Corruption Perception Index (*CPI*), an annual release by Transparency International. While the CPI is widely used, it does harbour certain limitations, such as its susceptibility to change due to varying perceptions and biases among surveyed businesspersons and analysts, as well as discrepancies in data availability (Brown et al., 2013).

2.3.2.5 Measurement of Press Freedom

To assess press freedom, we utilise annual data sourced from the Freedom House reports, for the years 2006 to 2020. We use the variable (*PF*) as a proxy for press freedom, a practice in line with the works of Ahrend (2002), Almaskati et al., (2020), Brunetti and Weder (2003), Chowdhury (2004), Dutta and Roy (2009), Dutta and Roy (2016), and Kalenborn and Lessmann (2013). This proxy is extracted from the annual Freedom of the Press report published by Freedom House, which gauges both the media's effectiveness in monitoring daily life and the degree of independence enjoyed by journalists in each country (Almaskati et al., 2020). The Freedom of the Press report has been published annually since 1980 and assesses media freedom in 199 countries and territories worldwide, encompassing print, broadcast, and digital media. Each country's overall score is determined by summing its scores in three primary categories: (1) laws and regulations influencing media content; (2) political pressures and controls on media content (which includes factors like harassment or violence against journalists, censorship, self-censorship, and more); and (3) economic influences over media content (Almaskati et al., 2020). The popularity of Freedom House's index stems from its extensive data coverage, both in terms of countries and duration (Dutta & Roy, 2016).

The press freedom score ranges from 0 to 100 points, with higher scores indicating lower levels of press freedom. The score categories are as follows: very good (0-15 points); good (15.01 to 25 points); problematic (25.01 to 35 points); bad (35.01 to 55 points); and very bad (55.01-100). We standardise variables to fluctuate between 0-100 following the approach of (Ahrend, 2011; Dutta and Roy, 2016; Kalenborn & Lessmann, 2013), where higher values signify a more favourable situation, specifically higher levels of press freedom. To achieve this recoding, we subtract each country's press freedom score from 100. This recoding simplifies the interpretation of coefficients (Kalenborn & Lessmann, 2013).

2.3.2.6 Measurement of Financial Development

To address the limitations associated with using single, narrow indicators such as the size of the stock market or the size of the banking sector as proxies for financial development, the study adopts a comprehensive Financial Development Index (*FD*) as recently proposed by Svirydzenka (2016). Evaluating financial development solely through the size of these individual components presents a limitation in that it primarily assesses the depth of financial markets. However, as argued by De Vita et al., (2020), such narrow measures fail to capture the multifaceted nature of financial development, especially considering the diverse financial systems across countries. Financial institutions encompass banks, insurance companies, mutual funds, and pension funds, while financial markets comprise stock and bond markets. Therefore, the Financial Development Index combines two key components, namely the Financial Institutions Index and the Financial Markets Index. This index offers a comparative ranking of economies based on their performance in terms of access, depth, and efficiency of both financial institutions and financial markets (See., Machokoto et al., 2021; Svirydzenka, 2016).

The Financial Institutions Index (FII) is composed of the Financial Institutions Depth Index (FID), Financial Institutions Efficiency Index (FIE), and Financial Institutions Access Index (FIA) (Machokoto et al., 2021). Meanwhile, the Financial Markets Index (FMI) incorporates the Financial Markets Depth Index (FMD), Financial Markets Efficiency Index (FME), and Financial Markets Access Index (FMA) (Machokoto et al., 2021). The advantage of this recently developed financial development measure, compared to alternative indicators, lies in its extensive coverage of country-year observations (De Vita et al., 2020). For more information on how variables are measured and their sources, refer to Table 2.2.

Table 2.2: Variable measurement and data sources

Variables	Variable definition	References
Dividend to assets (*DivAssets*)	Dividend paid dividend by total assets x 100	(Boţoc & Pirtea, 2014; Burns et al., 2015, Lee & Lee, 2019)
Dividend to Sales (*DivSales*)	Dividend paid dividend by sales x 100	(Breuer et al., 2014 ; Gonzalez et al., 2017; Fidrmuc & Jacob, 2010)
Firm size (*size)*	Net Assets divided by total assets	(Boţoc & Pirtea, 2014)
FirmAge (*age*)	Log of number of years since incorporation	(Acquaah, 2015; Ali et al., 2017; Al-Najjar & Kilincarslan, 2018; Lahiri & Chakraborty, 2014)
Cash Ratio (*cashratio)*	Cash and cash equivalents divided by total assets x 100	(Burns et al., 2015; Boţoc & Pirtea, 2014)
Debt Ratio (*debtratio*)	The sum of short-term and long-term debt as a percentage of the total assets	(Burns et al., 2015; Boţoc & Pirtea, 2014)

Tobin's Q estimation *(tobinsQ*)	The sum of the book value of debt and market value of equity divided by the book value of total assets	(Aoki, 2014; Boumosleh & Cline, 2015; Burns et al., 2015; Fitriya et al., 2014)
Profitability (*ROA*)	The ratio of the profit after tax but before interest to total assets	(Benlemlih, 2019; Fidrmuc & Jacob, 2010)
GDP per capita (LNGDP)	The natural logarithm of GDP per capita in 2010 USD constant prices	(Gul et al., 2015; Yesu and Adesui, 2016)
Shareholder Rights Index (*ShInd*)	The shareholders' index reflects the ability of shareholders to sue officers and directors for misconduct Strength of index (0 = weak to 100 = strong)	(Athari et al., 2016; Athari, 2022; Goyal & Muckley, 2013)
Directors' Liability Index (*DirLia*)	The director's Liability Index, with higher values, indicates the greater liability of directors. Strength of index (0 = weak to 100= strong).	(Athari et al., 2016; Goyal & Muckley, 2013)
Disclosure Index (*DisInd*)	The disclosure index measures the extent to which investors are protected through the disclosure of ownership and financial information. Strength of index (0 = weak to 100= strong)	(Athari et al., 2016; Goyal & Muckley, 2013)
Investor Protection (*InvPro*)	The "Strength of Investor Protection Index is the average of the "Extent of Disclosure Index ", "Extent of Director Liability Index" and the "Ease of Shareholder Suits Index. The score ranges from 0 to 100, where 0 represents the worst regulatory performance and 100 the best regulatory performance. Source: www.doingbusiness.org	(Athari et al., 2016; Goyal & Muckley, 2013)
Financial Markets Index (FMI)	The Financial Markets Index (FMI) is a combination of the Financial Markets Depth Index (FMD), Financial Markets Efficiency Index (FME), and Financial Markets Access Index (FMA). Source: https://data.imf.org	(De Vita et al., 2020; Machokoto et al., 2021; Svirydzenka, 2016)
Financial Institutions Index (*FII)*	Combination of Financial Institutions Depth index (FID), Financial Institutions Efficiency index (FIE), and Financial Institutions Access index (FIA). Source: https://data.imf.org	(De Vita et al., 2020; Machokoto et al., 2021; Svirydzenka, 2016)
Financial Development (*FD*)	The average of the Financial Markets Index (FMI) and the Financial Institutions Index (FII)	(De Vita et al., 2020; Machokoto et al., 2021; Svirydzenka, 2016)
Corruption of Corruption Index (CCI)	The control of corruption variable ranges from approximately –2.5 (weak control meaning high corruption) to 2.5 (strong control meaning low corruption).	(Bohara et al., 2004; Burns et al., 2021)
Press Freedom (PF)	It measures the strength of the media's monitoring role in everyday life and the degree of independence enjoyed by journalists in a particular country. We scale variables to fluctuate between 0-100 where higher numbers indicate a better situation, namely higher levels of press freedom, or rather, higher scores denote a freer environment (so zero implies the least freedom of the press).	(Ahrend, 2002; Almaskati et al., 2020; Brunetti and Weder, 2003; Chowdhury, 2004; Dutta and Roy, 2009; Dutta and Roy, 2016; Kalenborn and Lessmann, 2013)

	https://public.knoema.com/sqezrgd/world-press-freedom-index	
Property Rights (*PR*)	Property rights indicate the level of economic freedom concerning the legal system and property rights security. Source: https://www.fraserinstitute.org/economic-freedom/approach	(Ghoul et al., 2017; Machokoto et al., 2021)
Global Financial Crisis (GFCD)	Measure the effects of the Global Financial Crisis of 2008 by introducing a Global Financial Crisis Dummy variable. We designate the pre-crisis period from 2006 to 2007 as 0 and the post-crisis period from 2008 to 2020 as 1	(Al-Malkawi et al., 2015; Nguyen and Tran, 2016)

2.3.3 Estimation methods

2.3.3.1 Panel Data Analysis

The aim of this research is explanatory, as it seeks to elucidate the relationship between institutional factors and dividend policy. To investigate this relationship, a panel regression approach is employed, aligning with various authors in the dividend policy literature (Budagaga, 2020; Goyal & Muckley, 2013; Hosain, 2016; Naceur et al., 2006). In the context of this study, "panel data" refers to the amalgamation of observations across various entities, such as firms or countries, over multiple time periods (Baltagi, 2005). The dataset used in this research comprises both cross-sectional data representing the companies included in the sample and time series data spanning a maximum of fifteen years. Importantly, the data is strongly balanced, with no missing values in the time dimension. Panel data is favoured for its reliability over pooled data due to several advantages. It provides a greater degree of freedom and helps alleviate issues related to multicollinearity. Additionally, panel data allows for the control of fixed and random effects resulting from omitted variables, a critical consideration in empirical work on dividend policy, as highlighted by Naceur et al., (2006). Panel data regressions are particularly effective in addressing issues of omitted variables and endogeneity biases.

It is worth noting that pure cross-sectional regressions may yield inconsistent estimations because they are susceptible to both omitted variable and endogeneity biases. Consequently, panel data estimations are considered highly efficient in dealing with these econometric challenges, as is the case in this study. Moreover, panel data provides richer, more diverse, and more informative datasets, with increased degrees of freedom, ultimately enhancing the robustness of the analysis. Panel data also has the advantage of identifying and measuring effects that may not be discernible in pure cross-sectional or time-series data (Amidu & Abor, 2006). According to Sacristán-Navarro et al., (2011), the two most used panel data models are the fixed effect (FE) and random effect (RE) models. In the fixed effects models.

specification, company-specific effects are treated as fixed parameters to be estimated, while the random effects model assumes that companies constitute a random sample.
The general form of the panel data model can be specified as follows:

$$Y_{ijt} = \alpha_i + \beta X_{it} + \varepsilon_{it} \quad \textbf{(2.3)}$$

$$\varepsilon_{it} = \mu_i + \gamma_{it} \quad \textbf{(2.4)}$$

Where the subscript *i* denotes the cross-sectional dimension and *t* represents the time-series dimension. Y_{it} in the equation represents the dependent variable in the model, X_{it} represents explanatory variables used in the estimation model. α_i is used as a constant over time *t* and specific to the individual cross-sectional unit *i*, and lastly, ε_{it} represents the error term. Panel data analysis splits the errors into two components μ_i and γ_{it}. μ_i is an unobserved individual-specific effect. The remainder disturbance γ_{it}varies across individuals and time (Baltagi, 2005).

2.3.3.2 Estimation models – system GMM

This study employs the generalised method of moments (GMM) approach to estimate the equations due to the higher number of cross sections (i = 357) compared to the number of time units (t = 15) in the current study. Specifically, we utilise the system-GMM methodology (Arellano & Bover, 1995; Blundell & Bond, 1998) for our estimation. According to Athari (2022), the System-GMM estimator incorporates both level and first difference equations, surpassing the performance of the difference-GMM methodology introduced by Arellano and Bond (1991). GMM is well-suited for our analysis given the dynamic nature of our regression and the inclusion of lagged dependent variables. Traditional techniques like OLS, fixed effects, or random effects models can potentially yield biased and inconsistent estimators, due to the correlation between error terms and lagged variables. Additionally, issues of heteroscedasticity and autocorrelation may arise due to the distinct characteristics of different countries in the sample, leading to non-constant residuals across observations. GMM effectively addresses these concerns. System GMM offers several advantages, including controlling for the endogeneity of lagged dependent variables, mitigating omitted variables bias, accounting for unobserved panel heterogeneity, and addressing measurement errors (Naceur et al., 2006). However, it comes with the drawback of complexity, potentially leading to misinterpretation

of results. Furthermore, it does not account for cross-section dependence and is not advisable for panels with long time series.

Before conducting the analysis, winsorisation was applied to the data, trimming the top and bottom 5% of extreme values for each year. This step helps to mitigate the influence of outliers in line with established practices (e.g., Adhikari and Agrawal, 2018; Alzahrani and Lasfer, 2012; Athari, 2022). To execute the analysis, the study utilises the xtabond2 package, as recommended by Roodman (2009), and implements it within the Stata Software. Furthermore, we follow the approach of Boţoc and Pirtea (2014) by utilising the (1) orthogonal option to maximize sample size, given the presence of panel data gaps; (2) collapse option to prevent excessive instrument proliferation; and (3) two-step estimation with the robust option to correct standard errors. Additionally, we incorporate country and year dummies into our model to account for the distinct fixed effects associated with these variables, aligning with the practices of Athari (2022), Boţoc & Pirtea (2014), and Gul et al., (2015). As suggested by Gul et al., (2015), including country dummies should at least partially address the endogeneity concern stemming from potentially omitted country-level variables.

2.3.3.3The Hausman test

We employ the Hausman (1978) specification test to determine the suitable model, whether that be a random effect or fixed-effect model. In this test, the null hypothesis posits that the preferred model is a random effects model, while the alternative suggests a fixed-effects model. If the test result yields a value of less than 0.05, indicating statistical significance, we opt for the fixed-effects model. The significance of this test implies that the random effects estimator lacks consistency, making fixed effects estimates a more suitable choice (Abor & Bokpin, 2010).

2.3.3.3 Panel data test

2.3.3.3.1 Multicollinearity test

Multicollinearity is a term used to describe a situation in which two or more variables are highly interrelated, making it challenging to obtain accurate estimates of their regression coefficients (Field, 2009; Hosain, 2016). Essentially, these variables convey redundant information, and this relationship can distort the results of a statistical model by making it difficult to discern the unique impact of each independent variable. Similarly, Gujarati (2004) posits that multicollinearity often leads to a paradoxical outcome, where, although the regression model may fit the data well, none of the independent variables demonstrate a significant impact on predicting the dependent variable. To assess for multicollinearity among the independent variables, the study employs the variance inflation factor (VIF). As a rule of

thumb, a VIF coefficient exceeding 10 indicates the presence of multicollinearity (Al-Najjar & Kilincarslan, 2018; Hosain, 2016).

2.3.3.3.2 Hansen test

Hansen's test assesses the null hypothesis that the instruments used are collectively valid. Where failing to reject this null hypothesis, provides support for the choice of instruments, suggesting that all instruments are indeed valid.

2.3.3.3.3 AR (2) autocorrelation test

This test examines first-order and second-order serial correlation within the first-differenced residuals. The null hypothesis holds that there is no serial correlation in the residuals (Munisi & Randøy, 2013). Failing to reject this null hypothesis for second-order serial correlation indicates that the original term is not serially correlated, and the moment conditions are correctly specified. Therefore, the AR (2) statistic must be greater than 0.05.

2.3.4 Model specification

2.3.4.1 Model

To investigate the correlation among investor protection, property rights, press freedom, corruption, financial development, and firms' dividend policies in Africa, the study employs a dynamic panel model. This approach is influenced by the works of Al-Najjar & Kilincarslan (2017), Athari (2022), and Boţoc and Pirtea (2014), which have been tailored to the context of this study.

Boţoc and Pirtea (2014) emphasise that dynamic models offer several advantages, due to their ability to address omitted variables, endogeneity concerns, and potential collinearity between the independent variables.

Our estimation model is as follows:

$$DPR_{ijt} = \alpha + \beta_1 DPR_{ijt-1} + \beta_1 InvPro_{jt} + \beta_2 PR_{jt} + \beta_3 PF_{jt} + \beta_4 CCI_{jt} + \beta_5 FD_{jt} + \beta_{6-12} Controls_{ijt} + \varepsilon_{ijt} \quad \textbf{(2.5)}$$

Where DPR_{ijt} is the dividend payout ratio measured as seen in the section above. DPR_{ijt-1} is the dividend payout ratio at time *t-1*, $InvPro_{jt}$ represents investor protection; PR_{jt} represents the Property Rights Index; PF_{jt} measures the Press Freedom Index; CCI_{jt} represents World Bank Control of Corruption Index*;* FD_{jt} represents financial development. The variable, $Controls_{ijt}$ represents firm-level control variables such as *firm size, Tobin's Q, cash ratio, debt ratio, profitability (ROA)*, and *firm age*. Additionally, we

include $LNGDPC_{jt}$, a country-level control variable representing the natural logarithm of GDP per capita, to account for variations in economic development across countries. Further details and data sources for these control variables are presented in Table 2.2.

2.3.4.2 Control variables

The study employs a comprehensive set of firm-specific and country-specific control variables, which have been extensively examined in the context of determining dividend payout policies. These variables are essential for accommodating various theories of dividend policy, including agency cost theory, free cash flow theory, lifecycle theory, and signalling theory.

This study extends prior research (Arko et al., 2014; Burns et al., 2015; Enekwe, Nweze, and Agu, 2015) by evaluating the empirical significance of signalling theory, with firm profitability incorporated as a control variable measured by Return on Assets (ROA) (Arko et al., 2014; Burns et al., 2015; Denis and Osobov, 2008; Dewasiri et al., 2019; Enekwe et al., 2015; Zhong, 2016). Profitability consistently emerges as a crucial factor influencing dividend policy. The decision to adjust dividend payouts aligns with a firm's annual profits, as more profitable firms signal future profitability through generous dividends, as a key tenet of signalling theory. Consequently, the decision to increase or decrease dividend payouts depends on a firm's annual profits. It is widely believed that more profitable firms can distribute a significant portion of their profits to shareholders, whereas unprofitable firms struggle to provide substantial dividends (Budagaga, 2020). This aligns with signalling theory, where managers of profitable firms signal their future profitability by issuing generous dividends. Similarly, firms distribute dividends as a signal of their value to the market, and profitable firms declare dividends to communicate this information. In contrast, unprofitable firms refrain from paying dividends to avoid imitating the actions of profitable firms, lacking the means to sustain dividend payments in the future (Burns et al., 2015).

Additionally, following Boţoc and Pirtea (2014) and Burns et al., (2015), the study investigates the influence of agency costs by considering the cash and cash equivalents divided by total assets (*CASHRATIO*) as a control variable. Prior studies suggest that firms with excessively high cash ratios are more likely to pay larger dividends. For example, Burns et al. (2015) discovered that companies with substantial cash balances tend to offer higher dividends. Similarly, Boumosleh and Cline (2015) established a positive correlation between excess cash and dividend payments, contending that a cash shortage results in fewer dividends distributed, while an abundance of cash necessitates higher distribution as an agency control mechanism.

Furthermore, the study addresses the influence of information asymmetry and agency costs by considering the firm size (*SIZE*), measured as net assets divided by total assets, following the approach of Boţoc and Pirtea (2014). While net assets can provide a focused and stable measure of firm size by emphasizing equity and mitigating currency fluctuation effects, it also has limitations in terms of potentially underestimating firm size, ignoring leverage, and being less comparable across different industries. Previous research consistently demonstrates that larger firms tend to offer higher dividends (e.g., Al-Najjar and Hussainey, 2009; Fama and French, 2001; Holder et al., 1998). This phenomenon is attributed to large firms facing elevated agency costs, which prompts them to distribute higher dividends as a measure to alleviate agency-related challenges (Budagaga, 2020). Additionally, large firms are more likely to pay substantial dividends according to the transaction cost theory. This is based on the premise that larger firms, which are often more mature and with enhanced access to capital, find it easier to obtain external financing at a lower cost, making higher dividend payments more feasible (Holder et al., 1998).

The study also adopts the methodology of Arko et al., (2014), Burns et al., (2015), and Boumosleh and Cline (2015) by incorporating Tobin's Q (*TOBINSQ*), calculated as the sum of the book value of debt and the market value of equity divided by the book value of total assets. Therefore, *TOBINSQ* serves to capture growth opportunities. It is well-established that dividend policy is influenced by a firm's growth prospects. Guay and Harford (2000) and Jo and Pan (2009) highlight that companies with high market values (indicating significant growth prospects) might promise more consistent future payouts or use dividends to signal investment opportunities for capital raising. Alternatively, a high market-to-book ratio might reflect anticipation of future growth and capital needs, consequently leading to lower dividends (Boumosleh & Cline, 2015). Similarly, Burns et al., (2015) argue that, in environments with weak investor protection, firms with higher growth options tend to offer lower dividends due to the challenges of raising capital in such markets. Correspondingly, Nuhu (2014) asserts that greater growth opportunities necessitate increased financing for expansion, leading to a greater likelihood of retaining earnings. This suggests a negative relationship between *TOBINSQ* and dividend policy. However, the concept of dividends being used to bond firms in countries with weak investor protection may prompt them to offer higher dividends in the presence of substantial growth prospects (Burns et al., 2015). Consequently, dividend policy and Tobin's q may exhibit a positive correlation. Conversely, some studies (e.g., Arko et al., 2014; Burns et

al., 2015) report an insignificant relationship between growth opportunities and dividend policy, indicating a mixed effect.

Moreover, the study addresses the agency cost issue by including the total debt to total assets ratio (*DEBTRATIO*), following the lead of various research studies (e.g., Arko et al., 2014; Boţoc & Pirtea, 2014; Burns et al., 2015; Kaźmierska-Jóźwiak, 2015; Nuhu, 2014). The prevailing argument is that firms with high debt ratios are inclined to offer lower dividends, due to obligations associated with debt contracts and the need to minimise firm risk. Additionally, debt contracts often feature covenants that restrict dividend distribution, contributing to a negative impact of debt on dividend policy (Boumosleh & Cline, 2015).

In alignment with prior scholarly works (e.g., Ali et al., 2017; Al-Najjar & Kilincarslan, 2018; Lahiri and Chakraborty, 2014), the study introduces firm age (*AGE*) as a variable, represented by the natural logarithm of the years since establishment. The objective of this addition is to empirically scrutinise the life cycle theory. This theory posits that fledgling firms confront challenges in accessing the capital market during their initial phases, resulting in fluctuations in available investment prospects throughout the company's existence (Mueller, 1972). Consequently, young firms possess a surplus of investment opportunities, but a scarcity of capital, favouring the retention of earnings and a reduction in the dividend distribution. As firms advance in age, they tend to confront fewer investment prospects, leading to augmented free cash flow and a heightened propensity to offer increased dividends. Additionally, considering the agency theory perspective, young firms contend with diminished agency conflicts and predicaments, with the inclination to offer lower dividends.

Lastly, following Gul et al., (2015) and Yensu and Adusei (2016), we consider country-specific characteristics by incorporating the level of country development. This is accomplished by including the natural logarithm of real GDP per capita (*LNGDPC*). This step is taken to ensure that our political variables capture effects beyond mere distinctions between "rich" and "poor" countries (Choy et al., 2011; Gul et al., 2015).

2.4 Empirical results

2.4.1 Descriptive statistics

2.4.1.1 Summary statistics for the entire sample

Table 2.3 displays the descriptive statistics for the entire dataset, outlining key measures such as mean, median, standard deviation, number of observations, and minimum, and maximum values for each variable. The average DPR, measured using the variable *DIVASSETS*, stands at 3.399%, while it remains slightly higher at 4.488% when calculated with *DIVSALES*. This means that the payout ratio aligns with those observed in other emerging markets, as noted in studies such as that of Boţoc & Pirtea (2014).

Among the independent variables, the sample firms exhibit an average investor protection (*INVPRO*) score of 62.37, indicating moderately robust investor protection across all investigated countries. The Property Rights Index (*PR*) stands at 5.933, signifying a moderate level of property rights protection. The Press Freedom Index (*PF*) reads 71.256, indicating a high degree of press freedom. On the other hand, the Control of Corruption Index (*CCI*) is relatively low at -0.274, reflecting limited control over corruption in Africa, thereby suggesting a high degree of corruption. The average Financial Development Index (*FD*) is 0.393, indicating a low level of financial development. This suggests that both financial institutions and markets are underdeveloped within the African context.

Turning to the control variables, the firms exhibit a return on assets (*ROA*) of 6.458, indicating their profitability. Tobin's Q ratio (*TOBINSQ*) is 1.569, which provides insight into the firm's growth opportunities. The cash ratio (*CASHRATIO*) is 10%, highlighting the portion of liquid assets held by the firm. The debt ratio (*DEBTRATIO*) stands at 18.153%, reflecting the proportion of debt relative to total assets. Lastly, the GDP per capita (*GDPPERCAPITA*) is 4178.248 US dollars, serving as a measure of economic prosperity.

Table 2.3: Summary statistics

Variable	Obs	Mean	Median	Std. Dev.	Min	Max
DivAssets	5355	3.399	1.542	4.436	0	15.714
DivSales	5355	4.488	1.865	6.063	0	21.594
InvPro	5355	62.370	60.000	16.944	33.333	80.000
DirLia	5355	58.904	70.000	23.562	20.000	100.000
DisInd	5355	63.897	70.000	19.605	0	100.000
ShInd	5355	64.275	70.000	22.739	10	100.000
PR	5355	5.933	5.560	1.295	4.040	8.110
PF	5355	71.256	75.440	15.016	43.530	92.000
CCI	5355	-0.274	-0.116	0.475	-1.097	0.452
FD	5355	0.393	0.350	0.168	0.150	0.630
FII	5355	0.454	0.410	0.211	0.180	0.730

FMI	5355	0.316	0.300	0.150	0.050	0.530
TobinsQ	5256	1.569	1.243	0.878	0.642	3.899
Size	5355	0.492	0.494	0.219	0.077	0.873
Cashratio	5350	10.000	6.704	9.573	0.346	34.953
Debtratio	5331	18.153	13.968	17.446	0	56.527
ROA	5324	6.458	5.753	9.033	-12.709	25.015
GDPpercapita	5355	4178.248	3836.091	1804.321	1274.404	6263.104
Age	5355	44.695	41.000	25.035	10.000	98.000

Note: The table presents firm-specific and institutional summary statistics for a dataset comprising 13 African countries during the period 2006 to 2020. To mitigate the impact of outliers, the data has been winsorised at both the upper and lower 5% quantiles for each year. The *DPR* is evaluated using two metrics: *DIVASSETS,* which is the quotient of dividends paid and total assets, multiplied by 100, and *DIVSALES*, calculated as dividends paid divided by sales, multiplied by 100. Additionally, *INVPRO* represents the investor protection index, ranging from 0 to 100; *FD* indicates the Financial Development Index, ranging from 0 to 1; *CCI* signifies the Control of Corruption Index, with a range from -2.5 to 2.5; *PR* denotes the Property Rights Index, ranging from 0 to 10; *PF* corresponds to the Press Freedom Index sourced from Freedom House, with a range from 0 to 100; *TOBIN Q* is determined by the sum of the book value of debt and market value of equity, divided by the book value of total assets; *SIZE* is calculated as net assets divided by total assets; *CASHRATIO* represents the ratio of cash and cash equivalents to assets, multiplied by 100; *DEBTRATIO* is the aggregate of short-term and long-term debt as a percentage of total assets; *ROA* signifies the return on assets, calculated as profit after tax but prior to interest, divided by total assets, and multiplied by 100; *AGE* is the natural logarithm of the number of years since incorporation; Finally, *GDPPERCAPITA* is denoted in constant 2010 USD rates and reflects the GDP of a country divided by its population.

2.4.1.2 Summary statistics across countries.

Table 2.4 provides a comprehensive overview of summary statistics across different countries. As depicted in the table, our sample encompasses a diverse range of companies, with varying degrees of representation within each country. For instance, the dataset includes 1.4% of the total companies in Botswana, 17.37% in Egypt, 5.04% in Kenya, 3.36% in Ghana, 4.2% in Mauritius, 8.12% in Morocco, 36.97% in South Africa, 1.68% in Tanzania, 3.64% in Tunisia, 4.2% in Namibia, 10.92% in Nigeria, 1.4% in Uganda, and 1.68% in Zambia. Overall, this sample comprises a total of 357 companies, with South Africa being the most heavily represented, accounting for 36.97% of the entire sample.

The descriptive statistics highlight notable variations across countries. For instance, Botswana and Mauritius exhibit the highest and lowest mean dividend payout ratios (*DPR*) at 9.835% and 1.995%, respectively. In terms of investor protection, South Africa and Egypt stand at opposite ends of the spectrum, with South Africa having the highest mean investor protection and Egypt the lowest. Property rights (*PR*) are most strongly protected in Mauritius, with a mean of 7.079, while Nigeria offers the weakest protection, with a mean of 4.137. Press freedom (*PF*) is highest in Ghana and lowest in Egypt, with mean scores of 85.663 and 52.737, respectively. Financial development *(FD*) is most pronounced in South Africa, with a mean of 0.587, while Tanzania and Uganda show the least financial development, both with a mean of 0.15. Control of corruption (*CCI*) appears to be most robust in Botswana, indicated by a mean of 0.452, suggesting lower levels of corruption. Conversely, Nigeria exhibits the lowest degree of control over corruption, with a mean of -1.063, implying a higher prevalence. The debt ratio

(*DEBTRATIO*) varies significantly, with Uganda having the highest mean at 26.311, while Botswana has the lowest mean at 7.308. Profitability (*ROA*) is highest in Tanzania, with a mean of 11.508, and lowest in Tunisia, with a mean of 3.017. Lastly, the cash ratio (*CASHRATIO*) demonstrates considerable differences, with Botswana having the highest mean at 17.077, and Mauritius having the lowest mean at 3.717.

These statistics underscore the heterogeneity of institutional and firm-related factors across our sample of countries. This diversity confirms the appropriateness of conducting a cross-country analysis in this research. Furthermore, the results indicate varying levels of institutional development, as gauged by institutional factors within sample countries.

Table 2.4: Summary statistics across countries (Mean across countries)

Variables	Total	Botswana	Egypt	Kenya	Ghana	Mauritius	Morocco	South Africa	Tanzania	Tunisia	Namibia	Nigeria	Uganda	Zambia
DivAssets	3.399	9.835	4.738	4.177	2.236	1.995	3.576	2.511	7.951	2.905	2.403	3.114	6.642	4.519
DivSales	4.488	8.570	6.652	5.495	1.765	3.046	4.564	3.670	8.452	4.878	3.311	3.457	7.168	4.997
InvPro	62.370	56.667	40.000	55.111	63.333	79.333	45.556	80.000	52.889	50.000	53.333	59.778	48.222	56.667
DirLia	58.904	68.000	30.000	34.667	50.000	80.000	20.000	80.000	60.000	62.667	50.000	70.000	50.000	60.000
DisInd	63.897	72.000	60.000	43.333	70.000	70.000	64.667	80.000	20.000	32.000	50.000	50.000	30.000	40.000
ShInd	64.275	30.000	30.000	94.000	70.000	93.333	44.667	80.000	78.667	55.333	60.000	59.333	64.667	70.000
PR	5.933	6.705	5.597	4.67	5.318	7.079	5.596	6.829	4.801	6.291	6.239	4.137	4.884	4.985
PF	71.256	80.643	52.737	72.307	85.663	79.285	61.262	82.271	76.039	58.918	86.409	60.061	66.647	69.419
CCI	-0.274	0.452	-0.657	-0.953	-0.093	0.353	-0.300	0.085	-0.516	-0.132	0.327	-1.063	-0.975	-0.462
FD	0.393	0.339	0.313	0.169	0.157	0.411	0.330	0.587	0.150	0.213	0.473	0.221	0.150	0.187
FII	0.454	0.436	0.269	0.263	0.193	0.503	0.397	0.692	0.184	0.354	0.657	0.210	0.181	0.191
FMI	0.316	0.231	0.341	0.068	0.107	0.305	0.248	0.462	0.050	0.067	0.272	0.221	0.050	0.187
TobinsQ	1.569	2.477	1.363	1.581	1.694	1.088	1.687	1.510	2.315	1.499	1.945	1.654	2.291	2.051
Size	0.492	0.661	0.556	0.558	0.377	0.482	0.468	0.497	0.515	0.487	0.431	0.413	0.398	0.468
Cashratio	10.000	17.077	13.667	8.592	7.572	3.717	5.165	10.468	11.784	5.259	12.995	9.402	9.917	8.728
Debtratio	18.153	7.308	15.848	13.312	20.693	21.133	21.264	18.411	17.936	21.734	16.469	18.831	26.311	18.258
ROA	6.458	17.583	7.166	7.691	5.011	4.046	6.162	6.471	11.508	3.017	3.183	5.889	8.166	9.212
GDPpercapita	4178.248	5884.888	3345.574	1438.758	1612.940	6263.104	2741.278	6086.583	1274.404	3838.866	4430.328	2423.733	1274.404	1292.439
Age	44.695	34.800	41.070	53.581	38.350	54.840	47.423	42.103	53.167	37.723	44.089	51.564	64.200	42.167
Number of firms	357	5(1.4%)	62(17.37%)	18(5.04%)	12(3.36%)	15(4.2%)	29(8.12%)	132(36.97%)	6(1.68%)	13(3.64%)	15(4.20%)	39(10.92%)	5(1.4%)	6(1.68%)
Number of observations	5,355	75	930	270	180	225	435	1,980	90	195.	225	585	75	90

Notes: The table presents summary statistics for 13 African countries spanning the years 2006 to 2020. To mitigate the influence of outliers, the data has been winsorised, removing the top and bottom 5% for each year. The *DPR* is assessed through two measures: *DIVASSETS*, calculated as the ratio of dividends paid to total assets, multiplied by 100, and *DIVSALES*, calculated as the ratio of dividends paid to sales, multiplied by 100. Additionally, *INVPRO* denotes the Investor Protection Index, rated on a scale from 0 to 100. *FD* represents the Financial Development Index, ranging from 0 to 1. CCI reflects the control of corruption index, with a range from -2.5 to 2.5. *PR* stands for the property rights index, varying from 0 to 10. *PF* quantifies the press freedom index based on Freedom House's assessment, spanning from 0 to 100. TOBINSQ is computed as the sum of the book value of debt and the market value of equity, divided by the book value of total assets. *SIZE* signifies net assets divided by total assets. *CASHRATIO* corresponds to cash and cash equivalents divided by assets, multiplied by 100. The *DEBTRATIO* equals the sum of short-term and long-term debt as a percentage of total assets. *ROA* represents the return on assets, calculated as post-tax profit but pre-interest, divided by total assets, and multiplied by 100. *AGE* refers to the natural logarithm of years since incorporation. Lastly, *GDPPERCAPITA* is measured in constant 2010 USD rates, representing the Gross Domestic Product divided by the population of a country.

2.4.2 Pearson correlation matrix

Table 2.5 presents the outcomes of Pearson's correlation analysis and variance inflation factors (VIF) for the independent variables featured in the multivariate analyses. The table indicates notable relationships between certain independent variables, with a few of them demonstrating moderate correlation. To assess the presence of multicollinearity among these variables, VIF statistics are employed. Per a common guideline, VIF values exceeding 10 often signal the potential for multicollinearity (Al-Najjar & Kilincarslan, 2018; Hosain, 2016). Additionally, the Tolerance metric, calculated as 1 divided by the VIF, is utilised to evaluate the extent of multicollinearity. A tolerance value below 0.1, equivalent to a VIF value of 10, typically indicates the presence of multicollinearity (Al-Najjar & Kilincarslan, 2018). Remarkably, as demonstrated in the table, none of the VIF values surpass 10, and the tolerance values do not fall below 0.1. This outcome suggests an absence of significant multicollinearity among the independent variables, thereby enhancing the reliability of our analysis.

Table 2.5: Pairwise correlations

Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	VIF	1/VIF
(1) tobinsQ	1.000														1.53	0.653
(2) Size	-0.015	1.000													1.63	0.613
(3) cashratio	**0.202***	**0.257***	1.000												1.23	0.815
(4) Debtratio	**-0.132***	**-0.560***	**-0.348***	1.000											1.68	0.596
(5) ROA	**0.457***	**0.323***	**0.262***	**-0.363***	1.000										1.69	0.590
(6) GDPpercapita	**-0.111***	0.044*	0.027*	0.010	**-0.039***	1.000									6.44	0.155
(7) age	0.050*	**-0.076***	**-0.036***	**-0.068***	0.011	**-0.075***	1.000								1.10	0.911
(9) InvPro	**-0.074***	**-0.064***	**-0.051***	0.045*	**-0.068***	**0.737***	0.019	1.000							2.75	0.364
(10) PR	0.009	0.049*	0.024*	-0.016	0.046*	**0.677***	**-0.111***	0.472*	1.000						2.16	0.462
(11) PF	0.045*	**-0.023***	0.000	-0.015	0.032*	**0.486***	**-0.054***	**0.640***	0.372*	1.000					2.65	0.379
(12) CCI	-0.006	0.009	**-0.021**	0.015	**-0.015**	**0.773***	**-0.105***	**0.589***	**0.687***	**0.651***	1.000				1.69	0.251
(13) FD	**-0.080***	0.027*	0.048*	0.020	**-0.034***	**0.910***	**-0.076***	**0.685***	**0.572***	**0.480***	**0.704***	1.000			5.43	0.184
(14) DivAssets	**0.517***	**0.225***	**0.273***	**-0.307***	**0.593***	**-0.154***	0.072*	**-0.207***	**-0.070***	**-0.089***	**-0.118***	**-0.162***	1.000			
(15) DivSales	**0.314***	**0.275***	**0.202***	**-0.230***	**0.449***	**-0.094***	-0.002	**-0.175***	**-0.032***	**-0.097***	**-0.092***	**-0.095***	**0.782***	1.000		
Mean VIF															2.16	

Note: * is statistically significant at 1 %.

2.4.3 Multivariate Analysis

2.4.3.1 Dividend policy and institutional variables

The initial empirical analysis focuses on examining the institutional determinants of dividend policy in African-listed firms. The results of this analysis are presented in Table 2.6. In each of the models, the dependent variable is the dividend payout ratio (*DPR*), measured using *DIVASSETS*. The explanatory variables encompass investor protection (*INVPRO*), financial development (*FD*), control of corruption *(CCI*), press freedom (*PF*), and property rights (*PR*). The study also incorporated control variables such as firm size, firm age, cash ratio, debt ratio, Tobin's q, and GDP per capita.

Table 2.6 reports findings using dynamic OLS estimation (Model 1), fixed effects (Model 2), and system GMM (Model 3) under the assumption of exogeneity for all explanatory variables. In Model 4, the study presents system GMM results, while considering the endogeneity of explanatory variables. For interpretation purposes, the study focuses on results that exhibit consistency across all four models (1, 2, 3, and 4) and those specific to the system GMM (Model 3) due to a low Hansen test result in Model 4. Our preference for system GMM is rooted in its advantages over OLS and fixed effects estimation models. For instance, GMM addresses issues related to the endogeneity of the lagged dependent variable, omitted variable bias, unobserved panel heterogeneity, and measurement errors (Naceur et al., 2006). Additionally, GMM accounts for heteroscedasticity and autocorrelation, which may arise because different countries in the sample possess distinct characteristics, causing the residuals to vary across observations (David et al., 2006).

From the findings presented in Table 2.6, a consistent and statistically significant positive relationship emerges between *DPR* and the lag of the *DPR* across all models (1, 2, 3, and 4). This signifies that non-financial companies in Africa consider the previous year's payout ratio when determining the payout ratio in the current year. Consequently, higher payout ratios in the previous year correspond to higher payout ratios in the current year. This lends credence to the concept of dividend stickiness, dividend stability, or dividend smoothing. Essentially, companies set their current dividend levels to align with those of the previous year to avoid conveying negative signals to the market and triggering a negative market response (Arko et al., 2014). These results align with prior research findings (e.g., Arko et al., 2014; Boţoc & Pirtea, 2014; Fitriya et al., 2014; Naceur et al., 2006).

Our results confirm a negative and significant effect of investor protection (*INVPRO*) on dividend policy (α=-0.019, p < 1 percent), supporting our hypothesis. This indicates that investor protection and dividends act as substitutes in mitigating agency conflicts, consistent with La Porta et al., (2000) substitute model. As shareholder rights strengthen in Africa, dividend payouts decrease, highlighting a negative relationship between investor protection and dividend policy. Firms in weak investor protection environments pay higher dividends to compensate for the lack of protection, while those in strong protection environments, being less financially constrained, pay lower dividends. These findings align with previous studies (Athari et al., 2016; Chae et al., 2009; Jiraporn and Ning, 2006; John et al., 2015) which also suggest a negative relationship between investor protection and dividend payout policy. In countries with weak investor protection, companies may use generous dividends to attract and retain investors. From an agency perspective, strong investor protection reduces agency costs, lessening the need to use dividends as a signalling mechanism. In such environments, shareholders may prefer firms to retain earnings for growth and risk management rather than distributing dividends. Thus, our first hypothesis is strongly supported by these results.

Furthermore, our results affirm our second hypothesis, revealing a positive correlation between the Financial Development Index (*FD*) and the Dividend Payout Ratio (*DPR)*. The coefficient of the Financial Development (*FD*) appears to be statistically significant, exhibiting a positive impact ($\alpha = 2.261$, $p < 0.05$). Therefore, a one-unit increase in financial development corresponds to a 2.261-unit change in dividend policy. Therefore, changes in the development of both financial institutions and financial markets are associated with substantial increases in dividend payout. As markets mature, companies tend to allocate greater dividends to their shareholders. The underlying rationale is that heightened financial development can enhance access to capital, thereby motivating firms to pursue growth opportunities and increase investments (Dang, 2012). This, in turn, results in heightened profitability and subsequently leads to increased dividend payouts.

Moreover, enhancements in financial development can potentially lead to a decrease in capital costs (e.g., Bekaert and Harvey, 2003; Makina and Negash, 2005), mitigating agency conflicts, and reducing information asymmetry. Reduced capital costs translate to improved profitability, further driving higher dividend payments. Conversely, a reduction in information asymmetry can also contribute to elevated dividend payments. Additionally, augmented investments stemming from the evolution of financial markets can augment firm profitability, generating agency costs that necessitate dividend payments. Furthermore, as financial markets

progress, companies often mature and generate stable cash flows, facilitating consistent dividend payments. Lastly, firms operating within developed financial markets might employ dividends as indicators of their fiscal stability and growth prospects, consequently attracting increased investments. Greater investments translate to enhanced liquidity, prompting firms to distribute greater dividends.

Regarding the coefficient of the Control of Corruption Index (*CCI*), the findings indicate that firms in countries with robust corruption control or lower corruption levels tend to offer higher dividends. However, this relationship lacks statistical significance, implying that corruption may not exert a direct influence on firm performance (Van Vu et al., 2018), or impact firm output (Lavallée and Roubaud, 2011), and consequently, it might not directly shape a firm's dividend policy. This does not support the hypothesis, suggesting a positive connection between corruption and dividend policy. Therefore, variations in corruption levels do not consistently and substantially affect shifts in a firm's dividend policy in Africa. This result could be attributed to the potential dominance of other institutional variables that might have a more pronounced impact on dividend policy than corruption control, thereby potentially obscuring this effect. Furthermore, the absence of a significant correlation between corruption and dividend policy could be attributed to the time it takes for the effects of corruption on firm performance or output to manifest and consequently influence dividend policy. Another possibility is that some countries may possess more developed and effective corruption control mechanisms, yielding diverse effects on the dividend policies of African firms. It is important to note that these results contrast with the findings of Yensu and Adusei (2016), who identified a negative influence of corruption on the dividend policies of African firms. Discrepancies in results may be attributed to differences in corruption measurement techniques; while Yensu and Adusei (2016) employed the Control of Corruption Index by Transparency International, this study utilises the World Bank's Control of Corruption Index, which is arguably a more comprehensive measure of corruption, as highlighted by Bohara et al., (2004) and Brown et al. (2013).

Moving forward, it is notable that the coefficient related to property rights (*PR*) is positive, signifying that countries with robust property rights protection tend to offer higher dividends, due to factors such as increased investment, diminished agency costs, elevated firm performance, and reduced operational expenses. However, these findings lack statistical significance, implying that fluctuations in property rights do not consistently exhibit a notable and statistically significant influence on alterations in dividend policy. These outcomes appear

to counter earlier research, which implies that more robust property rights could potentially result in heightened dividend payouts, thereby enhancing efficiency and oversight (Naceur et al., 2006), and fostering increased funding (Rajan and Zingales, 2003), promoting greater investment (Ghoul et al., 2017). One potential explanation is that the impact of property rights on dividend policy could vary across distinct countries. Another plausible reason could be that company-specific factors and other institutional variables such as investor protection and financial development might wield greater sway over dividend policy, potentially masking the potential effect of property rights on such policy. Furthermore, the influence of property rights on dividend policy may require a longer timeframe to manifest, thereby possibly eluding detection in a short-term study. In summary, the outcomes prompt us to reject the hypothesis positing a positive correlation between property rights and dividend payout policy.

In parallel with our hypothesis, there is notable significance associated with press freedom, featuring a positive impact ($\alpha = 0.008$, $p < 0.10$). Consequently, a single-unit alteration in press freedom corresponds to a 0.008-unit shift in dividend policy. The implications of these findings suggest that nations with heightened press freedom tend to witness greater dividends for shareholders. This phenomenon can be explained by the notion that an independent press might decrease the cost of finance (Qi et al., 2010), spur heightened investment and growth (e.g., Alam and Ali Shah, 2013; Dutta and Roy, 2011), foster enhanced transparency and diminished information asymmetry (Dutta and Roy, 2016; Kalenborn and Lessmann, 2013), while simultaneously curbing agency costs (Almaskati et al., 2020). Consequently, under agency cost theory, a decline in agency conflicts is more likely to lead to increased dividend payouts. Similarly, heightened transparency, reduced information asymmetry, and elevated monitoring due to a free press could contribute to augmented dividend payments. The rationale of this is that companies may become more cautious in formulating their financing policies, including dividend distribution, recognising the potential for public scrutiny in the event of unfavourable actions, thus driving an increase in dividend payments. Lastly, in alignment with agency theory, companies operating within a climate of robust press freedom may adopt improved corporate governance practices, which can subsequently exert a positive influence on dividend policy.

Turning to the control variables, the cash ratio (*CASHRATIO*) exhibits a positive correlation with dividend payout. These findings imply that shareholders are more likely to receive substantial dividends from financially robust firms. These outcomes align with previous research (e.g., Arko et al., 2014; Boţoc and Pirtea, 2014; Burns et al., 2015) which indicates that companies holding higher cash reserves tend to distribute increased dividends as part of an agency control mechanism, while a shortage of cash tends to result in lower dividend payouts. Moreover, the favourable influence of the cash ratio on dividend policy indicates that firms with elevated cash ratios could be perceived as credible and adept at sustaining dividends over time. Similarly, firms boasting ample cash ratios might possess greater liquidity and be better equipped to meet short-term obligations, thereby enabling them to allocate more dividends. Lastly, a higher cash ratio can inspire investor confidence in a company's financial stability, potentially leading to elevated dividend payments. These findings lend support to the agency cost theory.

Furthermore, the outcomes indicate that firm size (*SIZE*) holds a positive yet statistically insignificant impact on dividend policy. These results align with existing studies (Arko et al., 2014, Kaźmierska-Jóźwiak, 2015; Ngo et al., 2018; Okoro et al., 2018) but are in contrast to research that establishes a connection between larger firms and higher dividend payments (e.g., Al-Najjar and Hussainey, 2009; Fama and French, 2001; Holder et al., 1998). The rationale behind our reported outcomes may be that the influence of size on dividend policy varies based on the specific circumstances of a company. Alternatively, institutional, and economic variables, along with other firm-specific factors, could potentially obscure the relationship between size and dividend policy.

Notably, the coefficient of Tobin's Q (*TOBINSQ*) is positive, signalling that firms with substantial growth opportunities tend to offer increased dividends. However, these results lack statistical significance. This pattern aligns with prior research (e.g., Arko et al., 2014; Burns et al., 2015; Nuhu, 2014) that identifies insignificant associations between growth opportunities measured by Tobin's Q and dividend policy. The explanation for this might be that companies in Africa place a premium on dividend stability, potentially overshadowing the influence of growth opportunities on dividend decisions. Additionally, other firm-specific factors, such as debt ratio or cash ratio, could exert greater sway over dividend policy than growth opportunities in the African context.

Regarding the impact of profitability on dividend policy, our findings reveal that profitability (*ROA*) has a positive and statistically significant effect on the dividend payout ratio. In essence, this suggests that profitable firms tend to distribute higher dividends. These results align with prior research (e.g., Arko et al., 2014; Gul et al., 2015; Burns et al., 2015), which consistently demonstrates the positive influence of *ROA* on dividend policy. Profitable firms possess the capacity to allocate a substantial portion of their earnings to shareholders, whereas unprofitable firms struggle to maintain high dividend payments. This observation aligns with signalling theory, where managers of profitable firms signal their future profitability by distributing generous dividends. Consequently, firms lacking profitability cannot emulate this strategy, as they are unable to sustain dividend payments over time (Burns et al., 2015). Another explanation for these results is grounded in agency cost theory. Profitable firms typically have more resources and free cash flow, necessitating higher dividend payments to mitigate the risk of misappropriation and minimise agency conflict. Additionally, companies with high *ROA* might feel confident about consistently offering higher dividends over time. Furthermore, firms with high *ROA* may have fewer attractive investment opportunities, which often lead to higher dividend payments to reduce agency costs related to potential misappropriation. Lastly, firms boasting high *ROA* may employ dividends as a signal of their financial strength to investors.

Our results also indicate that the debt ratio *(DEBTRATIO*) exhibits a negative and statistically significant impact on dividend policy. These findings are consistent with prior studies (e.g., Arko et al., 2014; Boţoc and Pirtea, 2014; Kaźmierska-Jóźwiak, 2015; Nuhu, 2014) that have consistently suggested a negative relationship between debt ratio and dividend payout policy. These results support the notion that firms with high debt ratios tend to distribute fewer dividends, primarily due to the need to fulfil financial obligations associated with debt contracts and a desire to manage financial risk. High debt ratios often translate into substantial interest payments, thereby reducing available cash for dividend distribution (Burns et al., 2015). Additionally, debt contracts frequently contain covenants that restrict dividend distributions (Boumosleh and Cline, 2015; Burns et al., 2015), further explaining the inclination toward lower dividend payouts. Furthermore, as part of sound risk management, firms with high debt ratios may opt to retain earnings to handle financial risk and meet debt obligations. Lastly, concerns about liquidity stemming from a high debt ratio may prompt companies to conserve cash for servicing debt rather than distributing it as dividends.

In contrast, the age of the firm (*AGE*) appears to have a negative and statistically insignificant effect on dividend policy. These results suggest that variations in a firm's age or growth opportunities are not significantly associated with changes in dividend policy. These findings align with research by Benavides et al., (2016) and Javakhadze et al., (2014), which similarly found no significant influence of firm age on dividend policy. This contradicts predictions from the life cycle theory, which posits that a firm's dividend policy changes with its maturity. Additionally, these results contradict the information asymmetry theory, which suggests that younger firms facing high information asymmetry will need to pay higher dividends. However, the insignificance of the firm's age to dividend policy may imply that the relationship between firm age and dividend policy is subject to shifts in the business environment over time. Additionally, the age of the firm may not necessarily dictate its growth trajectory. For instance, some older firms may still be in a growth stage, due to market expansion and product innovation, while some younger firms could be in a mature stage, due to rapid growth and changing market conditions. Therefore, age may not be a significant determinant of a firm's dividend policy. Institutional factors, as well as firm-specific variables like cash ratio, profitability, debt ratio, and prevailing market conditions, could exert stronger influences than age in explaining a firm's dividend policy.

The coefficient associated with the log of GDP per capita (*LNGDPC*) exhibits an insignificant positive impact on dividend policy. This implies that fluctuations in GDP per capita are not closely linked to changes in dividend policy. The results also suggest that economic growth does not influence dividend policy in Africa. One plausible explanation could be that the relationship between GDP per capita and dividend policy is non-linear and contingent upon the specific circumstances of a country. Additionally, it is possible that other institutional factors exert more influence on determining dividend policy than GDP per capita alone, and the nature of companies in specific countries may also contribute to the nuanced relationship between the two variables. These findings align with prior research (e.g., Gul et al., 2015; Yensu & Adusei, 2016), which similarly found no significant correlation between GDP per capita and dividend policy. Furthermore, it is worth considering that economic conditions may take time to exert an influence on a firm's dividend policy, and thus, that the impact may not be immediately reflected in their dividend decisions. Additionally, legal factors,

foreign investment trends, and international economic conditions may play a more significant role in shaping dividend policies than regional GDP per capita.[1]

In Model 4, the study accounts for the endogeneity of certain explanatory variables, acknowledging that they are not entirely determined outside the model. Therefore, the study applies the system GMM approach, treating corruption, press freedom, property rights, and GDP per capita as endogenous variables. This treatment is justified by the research of Pal et al. (2011), which indicates that press freedom influences economic growth. Similarly, Dutta and Roy (2016) reveal a negative correlation between press freedom and corruption, and Driffield et al., (2016) argue that press freedom is often associated with reduced corruption. Moreover, Levine (1997) suggests that economic growth may be influenced by the development of financial markets. Hence, our decision to treat these variables as endogenous is well-founded. However, the results obtained in Model 4 closely resemble those in Model 3, where all variables were treated as exogenous. The only discernible difference is that in Model 4, the coefficient of Tobin's q becomes significant, and the Hansen test yields a lower result, indicating that Model 3 is preferable, due to the higher Hansen test result.

In conclusion, these results underscore the significance of institutional determinants, such as investor protection, financial development, and press freedom, as influential factors in shaping dividend policy in Africa. Simultaneously, firm-level determinants like profitability, leverage, and cash holdings also play crucial roles in determining dividend policies.

[1] We also considered examining the effects of the Global Financial Crisis (GFCD) on dividend policy. However, our analysis found no significant differences in dividend policy between the pre-crisis and post-crisis periods in African markets. This is likely because firms adhering to the signalling mechanism are reluctant to cut dividends, and the GFC did not significantly impact these markets. These findings are consistent with those of Nguyen and Tran (2016). Our results in Table 2.6 remain unchanged. The detailed results can be found in Appendix 1A. Additionally, we aimed to control for regional differences and legal origin, but these variables were dropped due to collinearity.

Table 2.6: Institutional determinants of dividend policy

VARIABLES	OLS	FE	GMM (exog)	GMM (endog)
	(1)	(2)	(3)	(4)
DPR_{t-1}	0.599***	0.448***	0.822***	0.574***
	(0.020)	(0.012)	(0.138)	(0.040)
InvPro	-0.019***	-0.021**	-0.021**	-0.020**
	(0.004)	(0.009)	(0.009)	(0.009)
FD	-1.024**	1.948*	2.261**	1.963*
	(0.472)	(1.092)	(1.046)	(1.125)
CCI	0.022	0.747*	0.378	0.360
	(0.163)	(0.425)	(0.446)	(0.486)
PF	0.004	0.012**	0.008*	0.013**
	(0.003)	(0.005)	(0.005)	(0.006)
PR	-0.016	-0.033	0.054	0.033
	(0.037)	(0.055)	(0.063)	(0.067)
tobinsQ	0.676***	0.684***	0.250	0.693***
	(0.087)	(0.065)	(0.239)	(0.115)
Size	0.337	1.064***	-0.010	0.155
	(0.249)	(0.371)	(0.194)	(0.265)
cashratio	0.016***	0.020***	0.015***	0.023***
	(0.005)	(0.005)	(0.005)	(0.006)
Debtratio	-0.008***	-0.009**	-0.005*	-0.009***
	(0.003)	(0.004)	(0.003)	(0.003)
ROA	0.100***	0.063***	0.053**	0.094***
	(0.008)	(0.006)	(0.023)	(0.011)
Age	0.148*	0.968**	-0.027	0.022
	(0.076)	(0.433)	(0.060)	(0.084)
LNGDPC	0.354*	0.599	-0.916	-0.622
	(0.187)	(0.809)	(0.809)	(1.008)
Constant	-2.542*	-8.465	6.822	3.848
	(1.520)	(6.392)	(6.709)	(8.328)
Observations	5,229	4,936	4,936	4,936
R-squared	0.708	0.378		
# of firms	357	357	357	357
# of instruments			42	64
Country Dummies		Yes	Yes	Yes
Year Dummies		Yes	Yes	Yes
AR (2)			0.910	0.608
Hansen (P value)			0.705	0.137
Hausman test (937.07)		0.000		

Notes: The table presents regression coefficients obtained through Ordinary Least Squares (OLS), Fixed Effects, and System GMM estimation tests. The dependent variable, DPR (Dividend Payout Ratio), is calculated as the quotient of dividends paid by total assets, multiplied by 100. DPR_(t-1) represents the lagged DPR at time t-1. INVPRO denotes the Investor Protection Index, ranging from 0 to 100. FD stands for the Financial Development Index, ranging from 0 to 1. CCI indicates the Control of Corruption Index, with a range of -2.5 to 2.5. PR represents the Property Rights Index, which varies between 0 and 10. PF corresponds to the Press Freedom Index from Freedom House, ranging from 0 to 100. TOBIN Q is computed as the sum of the book value of debt and the market value of equity, divided by the book value of total assets. SIZE is defined as net assets divided by total assets. CASHRATIO signifies cash and cash equivalents divided by assets, multiplied by 100. DEBTRATIO is the sum of short-term and long-term debt, expressed as a percentage of total assets. ROA denotes the Return on Assets, calculated as post-tax profit before interest, divided by total assets, and multiplied by 100. AGE represents the natural logarithm of the number of years since incorporation, while LNGDPC represents the natural logarithm of GDP per capita. For the model coefficients, z-statistics are indicated in parentheses: ***, **, and * denoting significance at the 1%, 5%, and 10% levels, respectively.

2.4.3.2 Dividend policy, investor protection indices and financial development indices.

Table 2.7 provides the estimation results for OLS, fixed effects, and system GMM regarding investor protection sub-indices and financial development indices. The table illustrates the impact of each minority investor protection score (*INVPRO*) sub-classification index and each financial development (*FD*) subclassification index on dividend payout. Due to the recognised advantages of GMM over OLS and fixed effects, we place particular emphasis on interpreting the GMM results in models 3 and 6.

In Table 2.7, the disclosure index (*DISIND*) exhibits a consistently significant negative coefficient across all three estimation models. This indicates that an increase in the disclosure index leads to a reduction in dividend payout. This empirical finding provides support for La Porta et al., (2000) substitute model. Stronger investor protection, characterised by more extensive disclosure of ownership and financial information, diminishes the need for firms to rely on dividend policies as a reputation-building mechanism. In contrast, companies operating in countries with weaker disclosure indices may feel compelled to offer higher dividends to compensate for their lack of transparency. Furthermore, companies situated in environments with robust disclosure indices may adopt a more conservative approach by retaining earnings and reinvesting profits in growth opportunities. This could explain the observed negative effect of the Disclosure Index on the dividend payout ratio.

Director liability (*DIRLIA*) demonstrates a positive yet statistically insignificant effect on the dividend payout ratio, as evident in Model 3. This suggests that an increase in director liability could potentially result in higher dividend payouts. The rationale behind this interpretation is that heightened director liability may discourage managers from expropriating company resources, thereby reducing agency costs and facilitating higher dividend payments. However, it is important to note that this result lacks statistical significance. This outcome aligns with the findings of Athari et al., (2016). Conversely, the coefficient associated with the shareholder suits index (*SHIND*) is negative and statistically insignificant. This implies that an increase in shareholder suits does not appear to significantly impact dividend payout. This finding aligns with La Porta et al., (2000) substitute model. In summary, among the investor protection indices analysed for African firms, the disclosure index (*DISIND*) emerges as the most prominent and influential factor in explaining dividend policy.

The results concerning the sub-indices of financial development are presented in Models 4, 5, and 6, with Model 6 employing the system GMM estimation technique. In Model 6, we observe that the development of financial markets (*FMI*) exhibits a positive and statistically significant relationship with dividend payout. This implies that as financial markets become more advanced and robust, companies are more inclined to increase their dividend distributions.

Several plausible explanations can be considered. First, as financial markets mature, companies often gain improved access to capital, prompting them to distribute more dividends. Additionally, well-developed financial markets attract a diverse pool of investors. To attract these investors, companies may choose to pay higher dividends or increase their dividend yields. In countries with well-developed financial markets, companies may rely less on retained earnings for investment, resulting in higher dividend payouts. Moreover, as stock markets develop, firms may opt for equity financing over debt, due to its cost-effectiveness (Demirgüç-Kunt and Maksimovic, 1996), potentially leading to higher profits and, consequently, increased dividend payouts. Reduced funding costs and improved financing conditions in developed financial markets also contribute to enhanced financial performance and value (Almaskati et al., 2020). Furthermore, the development of financial markets can enhance corporate governance, as stock markets actively acquire, process, and disseminate information about firms and managers through published prices (Levine, 1997; Ho, 2019). In summary, the results support our hypothesis that a positive relationship between the development of financial markets and dividend policy.

Conversely, in Model 6, the coefficient associated with the Financial Institutional Index (*FII*) is positive but statistically insignificant. This implies that, as financial institutions develop, there may be a tendency for firms to increase their dividends. As financial institutions mature, companies may gain improved access to borrowing and alternative means of capital raising, which could positively influence dividend policy. However, the observed lack of statistical significance suggests that the development of financial institutions does not significantly determine the dividend policy of African firms. This result contrasts with previous studies that argue for a positive relationship between the development of financial institutions and dividend policy. For instance, Demirgüç-Kunt & Maksimovic (1998) contend that financial institutions are crucial for firm and industrial expansion, which may result in high growth and, subsequently, higher payouts. Similarly, Almaskati et al., (2020) argue that enhanced access to external financing, driven by the development of financial institutions, reduces the likelihood

of foregone value-creating investment opportunities due to inadequate financing, potentially leading to higher payouts. Furthermore, Aivazian et al., (2003) suggest that bank debt can mitigate moral hazard and agency problems. Therefore, as banks develop, firms may have greater access to financing from financial institutions, potentially reducing moral hazard and agency issues, and ultimately leading to higher dividend payments. However, our empirical findings indicate that African firms exhibit significant variability in their financing needs and access to capital, thereby mitigating the pronounced impact of financial institution development. It is also plausible that firms in Africa rely on alternative funding sources such as venture capital, private equity, and foreign investments, reducing their dependence on domestic financial institutions and rendering the impact of financial institution development insignificant. Additionally, the level of financial institution development may not be uniform across African countries, resulting in varying effects on dividend policy. Lastly, the influence of financial institution development may take time to manifest in firms' dividend policies, explaining the reported results.

Table 2.7: Regression results using sub-indices of investor protection and FD indices.

	INVESTOR PRO sub-indices			**FD sub-indices**		
VARIABLES	**OLS**	**FE**	**GMM**	**OLS**	**FE**	**GMM**
	(1)	**(2)**	**(3)**	**(4)**	**(5)**	**(6)**
DPR_{t-1}	0.601***	0.447***	0.828***	0.602***	0.451***	0.834***
	(0.020)	(0.012)	(0.140)	(0.020)	(0.012)	(0.132)
DirLia	-0.006**	0.006	0.003			
	(0.003)	(0.006)	(0.008)			
DisInd	-0.008***	-0.017***	-0.012**			
	(0.003)	(0.004)	(0.005)			
ShInd	-0.006**	0.012**	-0.001			
	(0.003)	(0.006)	(0.008)			
FII				-1.893***	-0.540	1.920
				(0.422)	(1.933)	(2.106)
FMI				0.042	1.038*	0.862*
				(0.414)	(0.586)	(0.442)
tobinsQ	0.668***	0.678***	0.239	0.696***	0.668***	0.228
	(0.088)	(0.065)	(0.241)	(0.085)	(0.065)	(0.227)
Size	0.327	0.974***	-0.022	0.420	1.094***	-0.013
	(0.248)	(0.372)	(0.190)	(0.258)	(0.371)	(0.191)
Cashratio	0.016***	0.020***	0.015***	0.016***	0.021***	0.015***
	(0.005)	(0.005)	(0.005)	(0.005)	(0.005)	(0.005)
Debtratio	-0.009***	-0.009**	-0.005	-0.008***	-0.008*	-0.005
	(0.002)	(0.004)	(0.003)	(0.003)	(0.004)	(0.003)
ROA	0.100***	0.064***	0.052**	0.098***	0.063***	0.051**
	(0.008)	(0.006)	(0.023)	(0.008)	(0.006)	(0.022)
Age	0.150**	1.053**	-0.029	0.116	1.066**	-0.030
	(0.074)	(0.431)	(0.060)	(0.075)	(0.431)	(0.058)
LNGDPC	0.126	-0.176	-0.582	0.356**	-0.286	-1.051**
	(0.136)	(0.697)	(0.537)	(0.149)	(0.591)	(0.490)

Constant	-0.818	-2.522	5.341	-3.085***	-1.750	6.785
	(1.078)	(5.627)	(4.438)	(1.145)	(5.232)	(4.719)
Observations	5,229	4,936	4,936	5,229	4,936	4,936
R-squared	0.708	0.378		0.707	0.376	
# of firms	357	357	357	357	357	357
# of instruments			40			39
Country Dummies		Yes	Yes		Yes	Yes
Year Dummies		Yes	Yes		Yes	Yes
AR (2)			0.917			0.906
Hansen (P value)			0.704			0.683

Notes: The table presents regression coefficients for investor protection indices and financial development using various estimation methods, including Ordinary Least Squares (OLS), Fixed Effects, and System GMM. The dependent variable, denoted as *DPR*, is calculated as the ratio of dividends paid to total assets, multiplied by 100. DPR_{t-1} represents the lagged value of DPR at time t-1. *FII refers* to the Financial Institutions Index, which ranges from 0 to 1, and *FMI* stands for the Financial Markets Index, ranging from 0 to 1. Other variables include *DISIND*, the Disclosure Index, DIRLIA the Director Liability Index, and *SHIND* the Shareholder Suites Index. *TOBIN Q*, calculated as the sum of the book value of debt and market value of equity divided by the book value of total assets, SIZE, representing net assets divided by total assets, *CASHRATIO*, the ratio of cash and cash equivalents to assets multiplied by 100, *DEBTRATIO*, computed as the sum of short-term and long-term debt as a percentage of total assets, *ROA,* denoting the return on assets (calculated as profit after tax but before interest to total assets multiplied by 100), *AGE*, the natural logarithm of the number of years since incorporation, and *LNGDPC,* the natural logarithm of GDP per capita. Model coefficients are presented with corresponding z-statistics in parentheses, indicating significance levels: ***, **, *, which represent significance at the 1%, 5%, and 10% levels, respectively.

2.4.4 Robustness checks

2.4.4.1 Estimations using alternative measures of dividend payout.

To assess the robustness of our findings, Table 2.8 explores whether our main results are affected when employing an alternative measure of the dividend payout ratio. In this analysis, this study replicates our primary model from Table 2.6, but this time replacing the dependent variable with a different commonly used measure of dividend payout found in the literature. Specifically, it is possible to normalise the dividend payout ratio by *DIVSALES*, which is calculated as the dividend paid divided by sales, then multiplied by 100. The outcomes closely mirror those previously reported in Table 2.6. For instance, Investor protection (*INVPRO*) exhibits a significant negative coefficient, financial development (*FD*) continues to display a positive and significant coefficient, and press freedom retains its positive and significant coefficient. Conversely, control of corruption and property rights remains insignificant in influencing dividend policy. Consequently, our alternative measure of the dividend payout ratio aligns with and reinforces our primary findings, indicating that the institutional determinants of dividend policy are indeed investor protection, financial development, and press freedom. This provides confidence in the robustness of our model and suggests that it is not compromised by any model specification issues.

Table 2.8: Regression using an alternative measure of dividend payout - DivSales

VARIABLES	OLS	FE	GMM
DPR_{t-1}	0.684***	0.496***	0.740***
	(0.023)	(0.012)	(0.094)
InvPro	-0.022***	-0.033***	-0.031**
	(0.006)	(0.013)	(0.012)
FD	0.099	2.995*	2.393*
	(0.810)	(1.629)	(1.414)
CCI	-0.296	0.488	0.300
	(0.229)	(0.634)	(0.661)
PF	0.003	0.020***	0.015*
	(0.005)	(0.007)	(0.008)
PR	0.101	0.049	0.095
	(0.062)	(0.081)	(0.085)
TobinsQ	0.407***	0.523***	0.250
	(0.096)	(0.096)	(0.155)
Size	1.522***	2.547***	0.685
	(0.560)	(0.555)	(0.606)
Cashratio	0.011	0.029***	0.015**
	(0.008)	(0.008)	(0.007)
Debtratio	0.002	-0.003	-0.003
	(0.007)	(0.006)	(0.006)
ROA	0.100***	0.063***	0.080***
	(0.010)	(0.008)	(0.018)
Age	-0.063	0.371	-0.171*
	(0.122)	(0.644)	(0.100)
LNGDPC	0.206	0.850	-0.354
	(0.279)	(1.206)	(0.967)
Constant	-1.758	-9.469	2.381
	(2.165)	(9.522)	(7.987)
Observations	5,229	4,936	4,936
R-squared	0.643	0.341	
Number of firms	357	357	357
Number of instruments			42
Country Dummies		Yes	Yes
Year Dummies		Yes	Yes
AR (2)			0.983
Hansen (P value)			0.853

Notes: The table presents regression coefficients obtained through OLS (Ordinary Least Squares), Fixed Effects, and System GMM estimation tests. The dependent variable, *DPR,* is calculated as the ratio of dividends paid to sales, multiplied by 100. The variable DPR_{t-1} represents the lagged DPR value at time t-1. *FD* corresponds to the Financial Development Index, ranging from 0 to 1. *CCI* stands for the Control of Corruption Index, with a range of -2.5 to 2.5. *PR* represents the Property Rights Index, spanning from 0 to 10. PF is the Press Freedom Index sourced from Freedom House, ranging from 0 to 100. *TOBIN Q* is computed as the sum of debt's book value and equity's market value, divided by total assets' book value. *SIZE* is derived by dividing net assets by total assets. *CASHRATIO* equals cash and cash equivalents divided by assets, multiplied by 100. *DEBTRATIO* corresponds to the sum of short-term and long-term debt as a percentage of total assets. ROA denotes the Return on Assets, calculated as post-tax profit but pre-interest, divided by total assets, and multiplied by 100. *AGE* represents the natural logarithm of years since incorporation, while *LNGDPC* stands for the natural logarithm of GDP per capita. In terms of model coefficients, z-statistics are enclosed in parentheses. Significance levels are denoted by ***, **, and *, representing significance at the 1%, 5%, and 10% levels, respectively.

2.4.4.2 Estimations Excluding South Africa

In this section, the study aims to evaluate whether the outcomes obtained are influenced by the specifics of the sample. The primary concern revolves around the weight of each country's contribution to the dataset. South Africa stands out as the largest contributor, providing 1,980 firm-year observations, accounting for 36.97 percent of the entire sample. It is widely recognised that the South African business environment possesses unique characteristics that can exert an impact on dividend policy. Consequently, the objective is to investigate whether the presence of South African companies significantly affects the overall results of our analysis. To address this concern, the study conducted a model excluding South Africa and presented the findings in Table 2.9. Overall, the results in Table 2.9 are in alignment with those presented in Table 2.6. However, when analysing the sample excluding South Africa, the study observes a connection between property rights protection and dividend policy. Moreover, it found no substantial relationship between financial development and dividend policy. Among the statistically significant factors, investor protection and press freedom emerge as influential determinants of dividend policy. Additionally, factors such as profitability, Tobin's q, and cash ratio exhibit a positive impact on dividend policy. Conversely, the debt ratio demonstrates a notable negative effect on dividend policy. Furthermore, variables including corruption, firm size, age, and GDP per capita do not appear to significantly impact dividend policy.

Excluding South Africa, the sample results largely match those in Table 2.6, except for the effects of property rights and financial development. The positive impact of property rights and the positive yet insignificant influence of financial development can be attributed to several factors. South Africa's economy, financial markets, legal system, and regulatory framework are distinct within Africa, given its size, history, and development level. These differences likely influence the relationship between property rights, financial development, and dividend policy. Additionally, the maturity of South Africa's financial markets may strengthen the correlation between financial development and dividend policy, making it statistically significant when included. Furthermore, South Africa's dual-listed firms, present on both the Johannesburg Stock Exchange and international exchanges, may lead to different investor behaviours and preferences compared to other African countries, affecting how property rights and financial development influence dividend policy.

Table 2.9: Regression results excluding South Africa

VARIABLES	OLS	FE	GMM
	(1)	(2)	(3)
DPR_{t-1}	0.595***	0.462***	0.706***
	(0.023)	(0.016)	(0.128)
InvPro	-0.020***	-0.013	-0.017*
	(0.005)	(0.009)	(0.009)
FD	-1.997**	0.949	1.122
	(0.879)	(1.391)	(1.216)
CCI	-0.476**	0.288	0.253
	(0.228)	(0.597)	(0.581)
PF	0.011**	0.017***	0.014**
	(0.005)	(0.006)	(0.005)
PR	0.242***	0.214**	0.202*
	(0.080)	(0.108)	(0.112)
tobinsQ	0.644***	0.627***	0.400*
	(0.092)	(0.083)	(0.215)
Size	0.335	1.344***	0.052
	(0.312)	(0.500)	(0.227)
Cashratio	0.024***	0.027***	0.026***
	(0.007)	(0.007)	(0.007)
Debtratio	-0.009***	-0.012**	-0.008*
	(0.003)	(0.005)	(0.005)
ROA	0.123***	0.079***	0.091***
	(0.011)	(0.008)	(0.028)
Age	0.099	0.508	-0.047
	(0.124)	(0.868)	(0.087)
LNGDPC	0.433**	-0.425	-1.105
	(0.183)	(1.019)	(0.930)
Constant	-4.898***	-0.572	7.672
	(1.512)	(7.894)	(7.137)
Observations	3,285	3,105	3,105
R-squared	0,730	0.398	
Number of firms		225	225
Number of instruments			41
Country Dummies		Yes	Yes
Year Dummies		Yes	Yes
AR (2)			0,572
Hansen (P value)			0.489

Note: The table presents regression coefficients for the sample, excluding South Africa, utilising Ordinary Least Squares (OLS), Fixed Effects, and System GMM estimation methods. The dependent variable *DPR* represents the dividend paid divided by total assets, multiplied by 100. DPR_{t-1} refers to the lagged *DPR* at time t-1. *INVPRO* denotes the investor protection index, ranging from 0 to 100. *FD* stands for the financial development index, with a range of 0 to 1. *CCI* represents the Control of Corruption Index, ranging from -2.5 to 2.5. *PR* signifies the Property Rights Index, ranging from 0 to 10. *PF* corresponds to the press freedom index from Freedom House, ranging from 0 to 100. *TOBIN Q* is calculated as the sum of the book value of debt and the market value of equity, divided by the book value of total assets. *SIZE* is defined as net assets divided by total assets. *CASHRATIO* represents the ratio of cash and cash equivalents to assets, multiplied by 100. *DEBTRATIO* is computed as the sum of short-term and long-term debt as a percentage of total assets, multiplied by 100. *ROA* stands for the return on assets, calculated as profit after tax but before interest, divided by total assets. *AGE* is the natural logarithm of the number of years since incorporation, while *LNGDPC* is the natural logarithm of GDP per capita. For the coefficients in the model, z-statistics are presented in parentheses. Statistical significance is denoted as ***, **, and * for the 1, 5, and 10 percent levels, respectively.

2.5 Conclusion

This study provides a comprehensive analysis of how institutional determinants such as investor protection, press freedom, property rights, financial development, and corruption shape the dividend policy of firms across 13 African countries from 2006 to 2020. The findings underscore the significant role of these institutional factors in shaping the dividend strategies of African firms, with investor protection, financial development, and press freedom emerging as principal determinants. Specifically, the study reveals a notable negative correlation between the strength of investor protection and dividend payouts. This finding aligns with La Porta's substitute model and is consistent with previous research (Athari et al., 2016; Burns et al., 2015; John et al., 2015). Stronger investor protection allows firms to retain more earnings for reinvestment and growth, reducing the need for high dividend payouts. Conversely, financial development and press freedom positively influence dividend policy. Enhanced financial development lowers capital costs and improves financing access, boosting firms' financial performance (Demirgüç-Kunt & Maksimovic, 1996; Almaskati et al., 2020) and thus leading to high dividends. Similarly, press freedom enhances corporate transparency and governance, reducing agency conflicts and supporting stable dividend policies (Levine, 1997). The study concludes that corruption and property rights protection have no significant impact on dividend policies in African firms. In Africa, the development of financial institutions has no significant effect on dividend policy, while financial market development positively influences it. This suggests that well-developed financial markets enhance firms' access to capital, supporting dividend payments, whereas other firm-specific or institutional factors may have a stronger influence on dividend policy than the development of financial institutions.

The findings have significant policy implications. Policymakers should prioritize enhancing investor protection through strong legal frameworks and governance reforms to support long-term growth over immediate dividends. Promoting financial development can lower financing costs and improve firms' access to capital, supporting sustainable financial performance and dividends. Improving press freedom and media transparency is crucial for ensuring shareholders have access to accurate information, which aids informed decision-making and builds investor trust. Addressing these factors enhances corporate strategies, boosts investor confidence, and fosters long-term economic development across Africa. A stable financial environment encourages innovation, expansion, and job creation, enhancing regional competitiveness. Strengthening media transparency also supports better governance and accountability, making African markets more attractive to global investors.

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Appendix 1A

Appendix 1A: Analysis of institutional determinants including the effects of Global Financial Crisis Dummy (GFCD)

VARIABLES	GMM
DPR_{t-1}	0.822***
	(0.138)
InvPro	-0.021**
	(0.009)
FD	2.261**
	(1.046)
CCI	0.378
	(0.446)
PF	0.008*
	(0.005)
PR	0.054
	(0.063)
tobinsQ	0.250
	(0.239)
Size	-0.010
	(0.194)
Cashratio	0.015***
	(0.005)
Debtratio	-0.005*
	(0.003)
ROA	0.053**
	(0.023)
Age	-0.027
	(0.060)
LNGDPC	-0.916
	(0.809)
GFCD	-0.033
	(0.333)
Constant	6.855
	(6.720)
Observations	4,936
# of firms	357
# of instruments	42
Country Dummies	Yes
Year Dummies	Yes
AR (2)	0.910
Hansen (P value)	0.705

Notes: The table presents regression coefficients of institutional determinants including the variable GFCD obtained through System GMM estimation tests. The dependent variable, DPR (Dividend Payout Ratio), is calculated as the quotient of dividends paid by total assets, multiplied by 100. DPR_(t-1) represents the lagged DPR at time t-1. INVPRO denotes the Investor Protection Index, ranging from 0 to 100. FD stands for the Financial Development Index, ranging from 0 to 1. CCI indicates the Control of Corruption Index, with a range of -2.5 to 2.5. PR represents the Property Rights Index, which varies between 0 and 10. PF corresponds to the Press Freedom Index from Freedom House, ranging from 0 to 100. TOBIN Q is computed as the sum of the book value of debt and the market value of equity, divided by the book value of total assets. SIZE is defined as net assets divided by total assets. CASHRATIO signifies cash and cash equivalents divided by assets, multiplied by 100. DEBTRATIO is the sum of short-term and long-term debt, expressed as a percentage of total assets. ROA denotes the Return on Assets, calculated as post-tax profit before interest, divided by total assets and multiplied by 100. AGE represents the natural logarithm of the number of years since incorporation, while INGDP represents the natural logarithm of GDP per capita and GFCD is the Global Financial Crisis Dummy where we assigned 0 for the pre-crisis period from 2006 to 2007 and 1 for the post-crisis period from 2008 to 2020. For the model coefficients, z-statistics are indicated in parentheses: ***, **, and * denoting significance at the 1%, 5%, and 10% levels, respectively.

CHAPTER THREE: Innovation, dividend policy, and institutional development

3 Introduction

Innovation and dividend policy are vital for businesses globally, with distinct yet interconnected roles in corporate management. Innovation encompasses a firm's commitment to research, development, and the creation of novel products, services, or processes, which can bolster its competitiveness and long-term sustainability. Over the past decade, investments in innovation have surged, emerging as a pivotal driver of long-term economic growth (Yang et al., 2020). Conversely, dividend policy revolves around the distribution of profits to shareholders through dividends, serving as a means to reward investors and signal financial health. Dividend policy remains a contentious topic throughout finance literature (Booth & Zhou, 2017; Yang et al., 2020).

The interplay between innovation and dividend policy has attracted extensive research and debate in corporate finance and management. Understanding how dividend policy aligns with innovation activities is of paramount importance to academic researchers and policymakers (Yang et al., 2020). The relationship between innovation and dividend policy is intricate and multifaceted, varying across industries, regions, and economic conditions. Firms often confront the challenge of allocating limited resources between innovation endeavours promising future growth and dividend payments satisfying current shareholders. Striking the right balance between these competing priorities is pivotal, as it directly impacts a firm's competitiveness, valuation, and adaptability to changing market dynamics (Hasan et al., 2022; Yang et al., 2020).

One of the critical decisions that management must make is whether to focus on long-term innovation investments, which do not yield immediate returns, or to pay dividends, a primary objective of the firm. Kim et al. (2021) argue that dividend payouts can strain a firm's liquidity, leading to underinvestment in value-enhancing R&D projects. However, the primary goal of a firm is to maximize its value and increase the market value of its stock (Lahiri & Chakraborty, 2014). Both investments in innovation and dividend payments can enhance value (Hasan et al., 2022). Nevertheless, Karpavičius (2014) suggests that firms with more stable dividend streams are more valuable than those with unstable dividend policies, as stable dividends are more favourably perceived by the market. Conversely, firms that invest in innovation create value by increasing profitability (Guerrero-Villegas et al., 2018).

In an ideal situation, firms would invest in both innovation and dividends, but this may not always be feasible, particularly in emerging markets with resource constraints and limited access to finance (Hasan et al., 2022). In scenarios where external finance is scarce and firms have limited internal cash flow, they face the dilemma of choosing between investing in innovation or paying dividends. Managers in emerging markets must decide whether to forgo the long-term value associated with innovation in favour of dividends or to pursue the simultaneous dividend theory, investing in both innovation and dividend policy while filling the financing gap with external sources. Since internal finance is typically less costly than external financing in imperfect capital markets, firms grapple with the decision of whether to allocate these cost-effective funds to finance innovation or distribute them as dividends (Hasan et al., 2022).

This study addresses two key research questions: first, what is the nature of the relationship between innovation and dividend policy; and second, is the strength of this relationship influenced by the quality of institutions or institutional development? The literature presents conflicting findings, suggesting the relationship between innovation and dividend policy is complex and may vary by country. Some studies (e.g., Lahiri & Chakraborty, 2014; Lasfer, 2002; Yang et al., 2020) show that investments in innovation positively influence dividend policy, while others (e.g., Boumosleh and Cline, 2015; Fama and French, 2001; Gugler, 2003; Hasan et al., 2022; Lee and Lee, 2019) indicate a negative relationship. Few studies (e.g., Hasan et al., 2022) have examined this effect in the African context, and existing research primarily focuses on developed markets. Moreover, Hasan et al., (2022) only consider South Africa, leaving much of the African context unexplored.

This study posits a negative correlation between innovation and dividend policy, where firms prioritizing innovation are likely to pay fewer dividends due to several mechanisms. Innovative firms involved in R&D guard proprietary information to prevent exploitation by competitors, increasing information asymmetry and making external financing more expensive. Consequently, these firms rely more on internal financing, diminishing available funds for dividends (Myers & Majluf, 1984; Lasfer, 2002). According to the residual theory of dividends, firms prioritize essential investments over dividend payments, paying dividends only after funding all positive NPV projects (Lasfer, 2002). Innovation also brings increased risk, costs, and uncertainty, leading firms to retain earnings to buffer against these risks, reducing funds available for dividends (McGee et al., 1995; Vermeulen et al., 2005; Guerrero-Villegas et al., 2018).

In African contexts, economic and political uncertainties, limited access to capital markets, and weak governance and institutional frameworks further compel firms to prioritize internal financing and retain earnings over paying dividends (D'Agostino et al., 2016; Munisi et al., 2014; Lemi & Asefa, 2003; Lupu & Riedl, 2013). Limited intellectual property protection deters firms from investing heavily in innovation, prompting them to retain earnings to cover potential losses or reinvest rather than distribute these earnings as dividends (Kaplan, 2009). Additionally, innovative firms often prioritize resource allocation toward maintaining and enhancing their competitive edge, necessitating substantial and sustained investment at the expense of immediate dividend payouts.

Agency theory suggests that managers of innovative firms may prefer to reinvest earnings into R&D to increase the firm's growth prospects and power, aligning with the prediction that managers might prioritize projects enhancing their control over returning cash to shareholders. High levels of innovation signal significant growth opportunities. Firms with strong innovation prospects are likely to reinvest earnings to exploit these opportunities, which can lead to lower dividend payouts (Aghion, Van Reenen, & Zingales, 2013). Firms focusing on innovation may prioritize future growth and profitability over immediate dividend payouts. The expectation of higher future returns often leads to a retention policy to support expansion and innovation activities (Denis & Osobov, 2008). Innovation often entails higher risk and uncertainty. To manage this risk, firms may choose to maintain higher retained earnings as a buffer against potential failures or downturns in their innovative ventures, leading to lower dividend payouts (Myers & Majluf, 1984). Innovative activities can result in volatile cash flows, prompting firms to reduce dividends to manage this volatility and maintain financial stability (Jensen, 1986).

Firms may use their innovation activities to signal strong future growth prospects to investors. Instead of paying out dividends, they invest in innovation to convey confidence in long-term value creation (Miller & Rock, 1985). Conversely, reducing dividends to fund innovation can signal to investors that the firm is focusing on long-term growth, even though it may lead to a short-term decrease in dividend income (Bhattacharya, 1979). Innovation projects often require substantial managerial discretion. Retaining earnings rather than distributing them as dividends allows managers to have more control over the allocation of resources towards innovative projects, potentially aligning managerial interests with long-term

value creation (Jensen, 1986). High innovation expenditures can be a way to mitigate agency problems by reducing free cash flow that managers might otherwise spend inefficiently. By reinvesting in innovation, firms can ensure that resources are used for productive purposes (La Porta et al., 2000). Investors in innovative firms might prefer capital gains over dividends, anticipating that successful innovation will lead to higher stock prices. Firms may adjust their dividend policy to meet the preferences of their investor base, focusing on reinvestment rather than immediate payouts (Brav et al., 2005). The market might perceive a firm that cuts dividends to invest in innovation more favourably, understanding that such investments are likely to yield high returns in the future (He & Tian, 2013). These channels collectively suggest that innovation is likely to have a negative effect on dividend policy, as firms prioritize reinvestment in innovation over dividend payouts to shareholders (Grullon, Michaely, & Swaminathan, 2002).

Recent empirical studies underscore the pivotal role of institutional development in shaping the innovation-dividend relationship (Hasan et al., 2022). This study posits that institutional development moderates the relationship between innovation and dividend policy in African firms, where weaker institutions amplify the negative association, and stronger institutions mitigate it. Weak institutional environments in many African countries heighten uncertainty, elevate risk premiums, and foster inefficiencies in innovation investments (Alam et al., 2018; Xiao, 2011). Firms operating in these contexts often incur higher costs associated with innovation projects, limiting profitability from R&D activities and necessitating reliance on retained earnings for innovation funding (Xiao, 2011). In contrast, robust institutional frameworks provide an enabling environment for innovation by facilitating access to external capital markets, thereby allowing firms to allocate internal resources to dividends while investing in innovation (Brown et al., 2013). Developed financial markets further enable firms to effectively balance dividends with innovation investments by facilitating easier access to external financing (Hsu et al., 2014; Cecchetti & Kharroubi, 2012; Arcand et al., 2015). Additionally, strong legal systems and effective governance structures attract investment, enhance R&D efficiency, and positively impact the relationship between innovation outcomes and dividend policy (Jiao et al., 2015; Seitz & Watzinger, 2017). Conversely, weaker rule of law and governance effectiveness contribute to higher agency costs, diminish returns from innovation investments, and exacerbate the negative impact on dividend policy (Canh et al., 2019; Cecchetti & Kharroubi, 2012). Corruption in environments characterized by weak governance further undermines investor confidence, increases business costs, and reduces

innovation profitability, thereby weakening the link between innovation success and dividend distributions (Alam et al., 2019; Canh et al., 2019

African countries provide an ideal setting for this study due to their diverse property rights protection, regulatory regimes, and capital market development (Andrianaivo & Yartey, 2010). Weak institutional development subjects firms to higher risks and lower profitability, exacerbating the negative relationship between innovation and dividend policy, while strong institutions can mitigate these risks, potentially leading to a positive relationship between the two. This study aims to illuminate the considerations firms must navigate to optimize their innovation and dividend strategies, particularly in the distinctive context of African markets. This research contributes to a deeper understanding of the choices firms make to optimize these strategies in a dynamic global business environment where institutions play a defining role. Recognizing the moderating effect of institutions in the relationship between innovation and dividend policies allows businesses to navigate market complexities, manage risks, and align dividend strategies with long

The subsequent sections of this paper proceed as follows: section 3.1 discusses various types of innovation; Section 3.2 presents the theoretical foundations and prior empirical evidence; Section 3.3 details hypothesis development; Section 3.4 describes the data and research design; Section 3.5 presents empirical results, and finally, section 3.6 concludes the paper.

3.1 Types of Innovation

Academic literature indicates the existence of four common types of innovation, namely: product, process, organisation, and marketing innovations. However, it is apparent from the literature that among these four types, product, and process innovations have received the most extensive attention in research. Consequently, these two types of innovation have been frequently classified as technological innovations in academic discourse. As a result, scholarly investigations into this typology have predominantly centred around research and development-based innovations (Damanpour, 2010; Tether & Tajar, 2008). This emphasis underscores the significance of technological innovation for both individual firms and the broader economy. The significance of technological innovation stems from its association with the creation of "new products" and "novel production methods", which are recognised catalysts for economic growth and corporate prosperity (See, Walker et al., 2015). Furthermore, firms often prioritise these two forms of innovation, due to their potential to fuel company expansion and confer a competitive advantage. Consequently, firms may successfully attract customers

away from their competitors, thereby expanding their market share and increasing profitability. This, in turn, may lead to increased dividends distributed to shareholders owing to augmented earnings and cash flow.

The subsequent section provides a comprehensive exploration of the four distinct types of innovation.

3.1.1 Product Innovation

According to the OECD and Eurostat (2005), product innovation is defined as the introduction of a good or service that is either new or significantly improved in terms of its characteristics or intended uses. This encompasses noteworthy enhancements in technical specifications, components, materials, incorporated software, user-friendliness, or other functional characteristics (Atalay, 2013). Contrary to common assumptions, engaging in new product development does not always mean creating something entirely novel; it can also involve refining existing offerings or addressing prevalent consumer problems. The aim of this is to secure market share, potentially resulting in heightened profitability for the innovative firm.

It is crucial to recognise that product innovations have an outward orientation, and are primarily market-driven. In contrast, process innovations have an internal focus, and pertain to techniques for producing and marketing goods or services. The impetus behind product innovations lies in responding to customer needs and demand, coupled with firms' aspirations to compete and grow. Consequently, product innovations manifest in the organisational outputs, potentially leading to product differentiation and market expansion (Damanpour, 2010; Schilling & Shankar, 2019). As a result, firm growth and profitability may experience an upswing due to product innovation, which may potentially translate into higher dividend payments.

3.1.2 Process Innovation

Process innovation, as defined by OECD and Eurostat (2005), involves implementing a new or significantly improved production or delivery method, encompassing substantial changes in techniques, equipment, and/or software (such as the installation of new or enhanced manufacturing technology, like automation equipment or real-time sensors for process adjustment, and computer-aided product development). In simpler terms, process innovation entails introducing a wholly new sequence to an existing production process, doubling production speed, and consequently saving both time and money for the organisation (Atalay, 2013). The driving forces behind process innovations include the reduction in delivery time,

an increase in operational flexibility, and the lowering of production costs. Consequently, process innovations are geared towards enhancing the efficiency and effectiveness of production, potentially leading to decreased production costs or improved product quality (Damanpour, 2010; Schilling & Shankar, 2019). Accordingly, process innovation is likely to contribute to increased firm profitability by enhancing efficiency and reducing costs.

Aligned with this perspective, Piening and Salge (2014) argue that organisational capabilities manage a broad spectrum of innovation-related activities, enabling a firm to enhance the likelihood of engaging in process innovation activities and improving profit margins. Such increases in profit margins are expected to generate high free cash flow, potentially resulting in increased agency costs. According to the free cash flow theory, this situation may prompt a firm to pay higher dividends.

3.1.3 Marketing Innovation

The OECD and Eurostat (2005) define marketing innovation as the implementation of novel marketing methods that encompass substantial changes in product design or packaging, product placement, product promotion, or pricing. Similarly, Sprong et al., (2021) characterise market innovation as purposeful actions by market stakeholders resulting in a distinctly new or modified form of the market. The authors emphasise that market innovation shapes the creation of new markets and the transformation of existing ones, encompassing considerations of both foreign and local markets, including new distribution processes. Marketing innovations, as highlighted by Atalay (2013), are directed towards more effectively meeting customer needs, exploring new markets, or strategically repositioning a firm's product to enhance sales. An example could be the substantial redesign of a furniture line to impart a fresh look and broaden its market appeal. The impetus for market innovation arises from the inevitability of change. Existing markets may undergo profound transformations, and new markets may emerge, presenting challenges that necessitate innovation by firms.

The imperative for market innovation is underscored by the dynamic nature of markets. Firms confront evolving landscapes, and innovation becomes a strategic response to navigate through challenges and seize emerging opportunities. The benefits of embracing innovation are substantial. Gupta et al., (2016) contend that implementing marketing innovation has proven effective in enhancing firm performance. Consequently, improved firm performance may translate into higher dividend payments, suggesting a positive correlation between market innovation and dividend policy.

3.1.4 Organisation innovation

According to the OECD and Eurostat (2005), organisational innovation refers to the implementation of new business practices, organisational structures, or external relations within a company. A crucial aspect of organisational innovation lies in its potential to distinguish a firm from its counterparts. Unlike organisational change, organisational innovation entails adopting methods not previously utilised by the company. The primary goal of organisational innovation is to enhance a company's performance by diminishing administrative or transaction costs, elevating workplace satisfaction, thereby boosting employee productivity, or cutting down supply costs (OECD and Eurostat, 2005). Numerous authors support the notion that organisational innovation can significantly enhance a firm's performance. For instance, Camisón & Villar-López (2014) present evidence indicating that the adoption of organisational innovation enhances a firm's technical capabilities, enabling the development of new products and processes that contribute to superior performance. Consequently, organisational innovation is likely to result in higher dividend payouts due to the improved overall performance of the firm.

3.2 Theoretical foundations and prior empirical evidence

3.2.1 innovation and dividend policy

Dividend policy plays a crucial role in a firm's financial management and serves as a tool for creating value. In theory, innovation can influence dividends through various avenues. Prior studies have proposed different explanations for the relationship between innovation and dividend payout policy, including the short-termism hypothesis, information asymmetry, pecking order theory, residual theory, reputation theory hypothesis, and simultaneous dividend theory. Interestingly, most of these explanations point to a negative correlation between innovation and dividend policy. However, the simultaneous dividend hypothesis and the reputation hypothesis suggest a positive relationship between innovation and dividend policy.

One of the explanations most considered plausible for the interplay between innovation and dividend policy is the short-termism or market myopia hypothesis, sometimes referred to as the independent dividend policy hypothesis (Miles, 1993). According to this theory, stock market investors tend to focus on the short term, valuing dividends while neglecting to reward companies that invest in innovation. Consequently, managers often adopt a short-term perspective, prioritising dividend payments over innovation investments, which may yield returns only in the long run. This perspective implies a negative connection between innovation and dividend policy. Furthermore, existing literature underscores the significance of cash flow

as a primary determinant of both a firm's investments (Hubbard et al., 1995) and its dividend policy (Brittain, 1966). Hence, it is evident that innovation and dividends frequently compete for the same internal sources of funds. Therefore, in scenarios where a firm experiences lower earnings, or reduced cash flow, the short-termism hypothesis suggests a preference for dividend payments over innovation investments (Lasfer, 2002). Similarly, firms tend to reduce investments in research and development (R&D) to counter a decline in earnings, as innovation can initially lead to reduced profits, and the rewards of R&D investments are delayed (Lahiri & Chakraborty, 2014). Therefore, prioritising dividends over innovation is considered a prudent choice.

Moreover, Holmstrom (1989) notes that innovation investments often face disadvantages, due to their long-term nature, high-risk profile, unpredictability, resource intensity, and idiosyncrasy. Consequently, the relationship between cash flows and investments depends on a firm's dividend commitments and its capacity to secure external financing (Lasfer, 2002). Therefore, in situations where obtaining external finance is challenging, such as in underdeveloped financial markets as observed in some African contexts (Andrianaivo & Yartey, 2010), the short-term hypothesis implies that a firm would prioritise dividend payments, adjusting innovation investments afterward. Supporting this rationale, Minton and Schrand (1999) find that companies often forego investments rather than fully tap into external capital markets to cover cash flow shortfalls. Additionally, due to the imperfect market assumption characterised by asymmetric information between managers and firms, dividends tend to serve as the primary indicators of firm quality and profitability, overshadowing investments in innovation (Lasfer, 2002). Therefore, in the face of financial constraints, firms are inclined to reduce their innovation investments to maintain dividend payouts, as dividends are viewed as the key indicators of firm value. In summary, according to the independent or short-term hypothesis, dividends take precedence, and investments in research and development are adjusted accordingly, suggesting a negative correlation between innovation and dividend policy.

The extent of information asymmetry can exert a profound influence on the correlation between innovation and dividend policy. Previous research indicates that investment in innovation tends to escalate informational asymmetry between the firm and external stakeholders, including creditors and investors. This is because R&D efforts are often underappreciated, and forecasts of future profits related to innovation are infrequently reported (Lee & Lee, 2019). Additionally, companies involved in R&D activities are typically reluctant

to disclose proprietary information, fearing potential exploitation by competitors (Kamien & Schwartz, 1978). Therefore, in line with the pecking order theory, firms characterised by high informational asymmetry are expected to prioritise financing through internal sources, low-risk debt, and stock issuance, in that sequence (Myers & Majluf, 1984). Consequently, innovative firms may lean towards internal capital sources and may be less inclined to pay dividends. Therefore, firms with substantial informational asymmetry (such as innovative firms) might distribute lower dividends while accumulating internal cash reserves to facilitate internal financing (Lee & Lee, 2018).

An et al., (2010) support this perspective, demonstrating that firms grappling with high informational asymmetry encounter challenges in accessing bank credit lines, as investments in innovation may heighten the cost of external financing. Moreover, unlike capital expenditures, raising external finance for R&D investments and/or dividend payments proves challenging (Lasfer, 2002). Therefore, firms may resort to holding cash for internal investments, such as innovation, instead of paying dividends. In summary, the information asymmetry hypothesis and pecking order theory suggest suggests a negative relationship between innovation and dividend policy and that firms would opt to use internal sources of funds for investing in innovation rather than pay dividends. at the expense of paying dividends

Another explanation for the interplay between innovation and dividend policy is presented by residual theory. Residual theory posits that investment policy is the primary determinant of firm value. Thus, when firms possess available funds, they prioritise essential investments that foster growth and enhance shareholder wealth. Depending on the availability of funds, they may then determine the level of dividends. Consequently, when a firm is engaged in innovation investments, it is expected to trim dividends to fund its growth options (Lasfer, 2002). Supporting this idea, Lang and Litzenberger (1989) reveal that growth-oriented companies tend to reduce dividends, without significantly affecting their share prices. Therefore, dividends are anticipated to exhibit volatility and a negative correlation with investment levels (Lasfer, 2002). According to residual theory, investments in innovation are given precedence, and dividends are adjusted accordingly, suggesting a negative relationship between innovation and dividend policy. However, some studies suggest that firms do not strictly adhere to the residual dividend policy. For example, Lasfer (2002) and Lahiri and Chakraborty (2014) indicate that companies manage both innovation investments and dividends simultaneously.

Additionally, dividends might be negatively linked to innovation because adjustments in innovation investments are often substantial (Martinsson, 2009). Hence, firms may opt to cut dividends rather than innovation during periods of low cash flow. According to Martinsson (2009), corporate R&D expenditure mainly comprises researcher salaries, and firms are often hesitant to terminate researchers due to substantial investments in their training. Firing R&D workers is also challenging, due to disclosure concerns related to ongoing R&D projects. Consequently, firms prefer to smooth their R&D expenditure to minimise the risk of drastic budget cuts. Therefore, higher adjustment costs associated with R&D and the subsequent smoothing of R&D expenditure make the R&D time series highly persistent. In situations of limited cash flow, firms may choose to cut dividends and maintain their innovation investments. In summary, the smoothing of R&D expenditures is likely to negatively impact shareholder wealth, leading to lower dividend payments.

In sum, the pecking order hypothesis, residual hypothesis, and the smoothing of R&D investments collectively suggest a negative relationship between innovation and dividend policy.

The reputation effect hypothesis offers further insights into the connection between innovation and dividend policy. According to this theory, management pays dividends to establish a positive market reputation (Lee and Lee, 2019). To ease fundraising and defend against hostile takeovers, firms aim to demonstrate that investors are treated well, achieved through dividend payments (DeAngelo et al., 2006). Hence, when a firm invests in innovation, it is expected to pay dividends, implying a positive relationship between innovation and dividend policy. Innovative firms may also require additional finance since innovation investments are constant and multi-year, and they are often targets for hostile takeovers (Bernstein, 2015; Fang et al., 2014). Consequently, firms may increase stock dividends to prevent takeovers and enhance internal holdings (Lee and Lee, 2019). Supporting this perspective, Lee and Lee (2019) demonstrate that, when a firm increases its investment in innovation, it also raises its stock dividends. Therefore, the reputation effect hypothesis suggests a positive relationship between innovation and dividend policy.

Another perspective on the relationship between innovation and dividend policy is presented by the simultaneous dividend theory. According to this theory, firms recognise the impact of external factors on dividend payments, while concurrently considering R&D investments (Lahiri & Chakraborty, 2014). Therefore, companies view both dividend payments

and R&D investments as avenues for value creation (Lasfer, 2002). Consequently, firms may invest in innovation while simultaneously paying high dividends. Companies are therefore expected to fulfill their innovation needs and adjust dividends to the desired level (Lahiri & Chakraborty, 2014). Simultaneous dividend theory proposes a positive relationship between innovation and dividend policy. This perspective aligns with the M and M theory, suggesting that a firm's dividend policy is independent of its investment policy. However, this may not hold in emerging markets, due to capital constraints, low financial development, and poor institutional development. Some studies provide support for the simultaneous dividend hypothesis. For instance, Lasfer (2002) shows that the payment of dividends, whether in terms of levels or changes, is not negatively related to R&D intensity. The authors show that both dividends and R&D investments are considered simultaneously, leaving external financing as a residual. Similarly, Yang (2020) studied Chinese listed firms from 2007 to 2015, demonstrating that firms with more R&D investments tend to pay more dividends. Thus, a decline in dividends is not accompanied by an increase in R&D investments. Furthermore, paying dividends does not lead to reduced investments in R&D. As such, Lasfer (2002) concludes that investment in R&D is influenced more by macroeconomic policy than by firm-specific factors. This suggests that other factors other than dividends influence innovation.

The relationship between innovation and dividend policy in African emerging markets remains an unresolved question, given the diverse and sometimes contradictory findings in the theoretical and empirical literature. This study aims to contribute new insights by examining this relationship specifically within the context of African listed firms. African markets are characterized by underdeveloped financial systems, varied regulatory environments, and differing levels of investor protection. These unique attributes highlight the need to explore how financial constraints and institutional factors influence the interplay between innovation and dividend policy in this context. By addressing these complexities, the study seeks to provide valuable insights into how firms in African emerging markets navigate these challenges, balancing investments in innovation with dividend payments

Concerning the relationship between innovation and performance, a research line indicates a positive correlation between innovation and firm performance. Consequently, if innovation is positively related to firm performance, it is likely to be positively related to dividend policy. Also, in line with signalling theory, a firm engaging in innovation may want to signal its future performance by increasing dividends. Additionally, prior studies demonstrate that innovative firms generate higher profitability, more growth opportunities, and

more excessive stock returns compared to other firms (Yang and Chen, 2003). Likewise, Calantone et al., (2002) and Low et al., (2007) show a positive relationship between innovation and firm performance. Therefore, innovation constitutes the main driver of economic growth, contributing to the firm's profitability and long-term continuity (Guerrero-Villegas et al., 2018). If profitable firms have been found to pay high dividends (See, Fama and French, 2001; Yensu and Adusei, 2016), then innovative profitable firms are likely to pay high dividends. Furthermore, an innovative firm will communicate positive insider information regarding the future success of the firm to the market (Lee and Lee, 2019) by increasing their dividends. Also, in line with the signalling theory, dividends are used as a signal of future profitability for the innovative firm. On the other hand, some studies (e.g., McGee et al., 1995; Vermeulen et al., 2005) show a negative relationship between innovation and firm performance. These studies suggest that innovation is a risky and expensive activity, having negative outcomes, such as increased exposure to market risk, higher costs, employee dissatisfaction, and unwarranted changes (Guerrero-Villegas et al., 2018). If innovation leads to lower firm profitability and takes away firm cash flow, then innovation is likely to lead to lower dividend payments. This is because firms that have never paid dividends tend to be smaller, and less profitable (Rakotomavo, 2012). Therefore, innovative but less profitable firms are likely to pay less dividends, suggesting that innovation and dividend policy could be negatively correlated.

Innovation and dividends could also be linked to dividend policy through ownership concentration. This can happen through the entrenchment effect of ownership concentration (Tsao & Chen, 2012). The entrenchment effect posits that as ownership rights become more concentrated in the hands of a single shareholder, that controlling shareholder becomes more entrenched; that is, he or she is better able to extract private benefits of control at the expense of minority shareholders. Therefore, controlling shareholders with a higher degree of control forgo long-term innovative investment to expropriate wealth from minority shareholders (Morck et al., 2005). This suggests that controlling shareholders would rather have it that firms pay high dividends at the expense of innovation. Therefore, controlling shareholders can divert a firm’s resources for private benefits and further exacerbate the agency problem (Tsao & Chen, 2012). Supporting this view are Tsao and Chen (2012) who study Taiwanese listed firms and show that the effects of internationalisation on firm performance and innovation are negatively moderated by the divergence in the controlling shareholder’s control-cash flow rights. Therefore, in the presence of controlling shareholders, firms are likely to pay high dividends

and make low investments in innovation, thereby suggesting a negative relationship between innovation and dividend policy.

The empirical results regarding the nature of the relationship between innovation and dividends are mixed, where the relationship between innovation and dividend policy is still not clear. For instance, Lasfer (2002) analyses the determinants of dividend payments and tests the hypothesis that companies pay dividends at the expense of investing in research and development (R&D). The author finds no evidence to support the hypothesis that by increasing (decreasing) dividends companies decrease (increase) their R&D investments. Their findings provide support for the simultaneous dividend theory. That is, firms will invest in innovation and pay dividends. Similarly, Lahiri and Chakraborty (2014) examine short-termism, i.e., a negative trade-off between dividend payments and research and development (R&D) investments of corporate firms. The author provides evidence to discard the short-termism theory and provide evidence in support of the simultaneous dividend theory, which holds that both dividends and innovation are positively related. On the contrary, supporting the negative relation between innovation and dividends, Gaver and Gaver (1993) find significantly lower dividend yields for growth firms with higher R&D investments than for non-growth firms. This provides evidence that innovation is negatively related to dividends, in the sense that firms that invest in innovation pay fewer dividends.

Similarly, Fama and French (2001) find that firms with good investment opportunities pay out substantially less, or are much more likely to pay out nothing, than other firms in the US. The evidence by Gaver and Gaver (1993) and Fama and French (2001) provides support for the pecking order theory and residual theory, in the sense that firms decide to keep internal finances for investments in innovation, and pay low dividends, to minimise the cost of capital. Furthermore, in a study on corporate governance, dividend payout policy, and the interrelation between dividends, R&D, and capital investment, Gugler (2003) demonstrates that firms with low growth opportunities (no R&D spending) optimally disgorge cash through dividends irrespective of who controls the firm. The author also revealed that, in firms with good growth prospects (positive R&D spending), even minority shareholders may find it optimal to wait for their dividends. In the same vein, in examining the association between outside director stock options and dividend policy and controlling for innovation, Boumosleh and Cline (2015) argue that high R&D firms on average have more investment opportunities and a greater need for cash. The authors show that investment policy dominates the decision to offer a dividend, by showing that smaller, less leveraged, high market-to-book, and high R&D firms typically

distribute low or no dividends at all. Similarly, Lee and Lee (2019) examine the relationship between a firm's research and development (R&D) intensity and dividend payout policy, with a focus placed on biotech firms in South Korea. The authors show that biotech firms' R&D intensity is negatively correlated to dividend payout. That is, in biotech firms, increased internal cash holding is accomplished via a lower dividend policy and is positively associated with long-term corporate value through innovation. The authors also document that rapidly growing firms tend to reinvest their earnings back into the firm, instead of returning them to shareholders. This evidence contradicts the predictions of the independent or short-term myopic hypothesis. It also suggests that firms value innovation over the payment of dividends. However, this line of research provides support for the residual dividend theory in which investments in innovations are given first consideration and dividends are adjusted accordingly. Furthermore, supporting the notion that innovation is negatively related to dividend policy, Hasan et al., (2022) examine the moderating effects of investor protection and other country-level governance mechanisms on the relationship between R&D investments and dividend payments in the firms from Brazil, Russia, India, China, and South Africa (BRICS countries). They show that innovation is negatively related to cash dividend payments, with the interaction of investor protection and other country-level mechanisms the relationship between R&D intensity and dividend payments becomes positive. They show that firms in BRICS countries with weak investor protection invest in more innovation, and pay lower dividends, thus suggesting a negative relationship between investments in innovation and dividend policy.

In summary, the existing literature presents conflicting evidence regarding the relationship between innovation and dividend policy, with limited exploration of this relationship within the African context. While some studies suggest a positive influence of innovation on dividend policy (Lahiri and Chakraborty, 2014; Lasfer, 2002; Yang et al., 2020), others indicate a negative correlation (Boumosleh and Cline, 2015; Fama & French, 2001; Gugler, 2003; Hasan et al., 2022; Lee and Lee, 2019). However, there appears to be a consensus that innovation negatively affects dividends, primarily due to the competition for internal funding sources between dividend payouts and investment in innovation (Lasfer, 2002).

Much of the research on this topic has been conducted in developed markets, with limited attention given to African firms. Moreover, existing studies often focus on specific regions within Africa, such as South Africa, leaving a significant gap in our understanding of how innovation impacts dividend policy across the broader African landscape. As this study examines the effects of innovation on dividend policy in African listed firms, it aims to fill this

crucial gap by providing insights tailored to the unique context of African markets. By exploring the interplay between innovation and dividend policy within African firms, the research seeks to offer fresh perspectives and nuanced insights that can contribute to a more comprehensive understanding of this relationship. Through rigorous empirical analysis and contextual considerations, this research endeavours to shed light on the specific dynamics at play in African markets, thereby advancing our knowledge of corporate finance and governance in the region.

3.2.2 Innovation, dividend policy and institutional development

The correlation between innovation, dividend policy, and institutional development is gaining attention from scholars and policymakers. Recent empirical studies (e.g., Hasan et al., 2022) emphasise the nuanced role of institutional moderation, illustrating how variations in institutional development across countries significantly influence the innovation-dividend policy relationship. According to Lasfer (2002), macroeconomic policies, rather than firm-specific factors, drive investment in R&D. Consequently, changes in dividend policy or innovation are influenced more by macroeconomic factors than they are by reciprocal changes. These findings underscore the importance of considering the institutional context when analysing firms' strategic decisions, shedding light on factors influencing the choices between innovation and dividends. Understanding the moderating role of institutions is crucial for both academic research and practical applications in corporate finance, providing insights into how firms navigate innovation and dividend decisions in diverse institutional landscapes.

Institutional contexts characterised by well-defined property rights, strong investor protection, good governance, and developed financial markets often enable firms to balance innovation and dividend policy effectively. Therefore, in such environments, firms may be more inclined to retain earnings for innovation (Alam et al., 2019; Canh et al., 2019) and also pay dividends, as shareholders have confidence in the safeguarding of their investments, and external capital markets offer viable alternatives for financing innovative projects. Conversely, weaker institutional settings, marked by inadequate investor protection, poorly developed financial markets, and uncertain legal frameworks, may push firms toward a more conservative dividend policy at the expense of innovation. Firms in these contexts may find it optimal to invest in innovation and pay fewer dividends. Therefore, rapidly growing firms may opt to reinvest their earnings in innovation instead of paying dividends. Additionally, firms in weak institutional environments face a high cost of capital and would rather use internal sources than external sources to fund investments in innovation than pay dividends, thus making the

negative effect of innovation on dividend policy more pronounced in weak institutional environments. Furthermore, low financial development in weak institutional environments makes it hard for firms to have access to capital to fund innovation projects, thereby placing reliance on internal sources of funds thus limiting the amounts of dividends that can be paid. In addition, innovation failures are often high in weak institutional environments (See., Tebaldi and Elmslie, 2013), leading to a decreased profitability that negatively impacts dividend policy. Therefore, it can be argued that the strength and nature of the relationship between innovation and dividend policy in African firms is significantly influenced by variations in institutional development, with weaker institutional development exacerbating the negative association and stronger institutional development mitigating it.

Previous research indicates that institutional quality positively affects innovation by boosting R&D investment (Alam et al., 2019) as well as patent production (Canh et al., 2019). Likewise, Tebaldi and Elmslie (2013) find that control of corruption, market-friendly policies, protection of property rights, and a more effective judiciary system enhance a country's rate of innovation (patent production). Similarly, Alam et al., (2019) show that government effectiveness, rule of law, and regulatory quality have a significant positive impact, while corruption and political instability have significant negative impacts on R&D investment in emerging countries. Similarly, Canh et al., (2019) demonstrate that control of corruption, government effectiveness, political stability, regulatory quality, rule of law, and voice and accountability all positively influence the number of patent applications, suggesting that institutional quality can facilitate innovation in a country. Therefore, sound and strong institutions help to promote R&D investment by ensuring better access to finance and less information asymmetry, mitigating the managerial expropriation problem, while providing better investor protection that reduces transaction costs (Alam et al., 2018). The same is true weak institutional quality affects innovation output. If this is true, and innovation is positively related to firm performance (Calantone et al., 2002; Low et al., 2007), then it is expected that in strong institutional environments, firms investing in innovation are likely to pay high dividends, while firms operating in weak institutional quality opting to invest in innovation will pay less dividends.

Furthermore, Tebaldi and Elmslie (2013) argue that, if two countries have the same number of innovations, the country with weak institutions would have fewer registered patents, due to inefficiency. Good institutions aid in registering new patents, diffusing ideas among researchers, disseminating current knowledge, enforcing property rights, and reducing the

uncertainty of new projects—all factors that stimulate R&D activity. Therefore, in weak institutional environments, there is high inefficiency and uncertainty from innovative activities, creating less innovative output and leading to less profitability, thereby impacting dividend policy negatively. Likewise, Tebaldi (2010) argues that, without changes in current institutions, the economy cannot fully exploit the efficiency gains from current innovation, making institutional change a necessary part of economic growth. In the same vein, Wang et al., (2015) note that institutions influence firm innovation activities through laws, regulations, and policies. Therefore, Tebaldi and Elmslie (2013) suggest that suitable macro-institutions may provide proper incentives for innovation by changing firms' myopic behaviour in the short run, leading firms to engage in innovative processes that ensure long-term profitability. They further argue that an economy with institutional arrangements not changing at the rate needed to follow the path of technological change will experience a slowdown in its rate of innovation and, consequently, a slowdown in its growth rate of output. A decrease in output could lead to low cash flow, resulting in low dividend payments. Faced with this, firms encounter the dilemma of deciding between investing in risky innovation or paying dividends.

In addition, better institutional quality reduces asymmetric information, decreasing transaction costs and risks (Canh et al., 2019). Likewise, institutions also influence the cost of innovation inputs and protect the outputs, thereby influencing firms' innovation activities (Alam et al., 2019). Therefore, in weak institutional environments, firms are faced with a high cost of innovation thus limiting their profitability, which may in turn lead to low dividend payout. Furthermore, Choi et al., (2014) point out that effective institutions can encourage R&D investments by minimising the agency problem among decision-makers. Moreover, better institutions promote financial market liberalisation, encouraging R&D investment by reducing financial constraints on firms (Laeven, 2003). This suggests that better institutions may lead to high profitability from innovation investments, resulting in high dividend payments. Conversely, in weak institutional environments, asymmetric information tends to be high, along with transaction costs and risks associated with innovation, leading to inefficiency. Managers in such environments may incur high costs, lower innovation output, and thus lower firm profitability, and thus, less dividends.

The above discussion suggests that weak institutions exacerbate the negative relationship between innovation and dividend policy. Moreover, when a firm in a weak institutional environment invests in innovation, the high risk of failure and inefficiency may lead to low profitability, translating into fewer dividend payments over time. Therefore, a firm's

innovation capabilities depend on institutional settings (Alam et al., 2019). If this is true, the strength of the relationship between innovation and dividend policy ought to vary across different institutional environments.

Turning to the measures of institutional development, investor protection constitutes one of the key indicators of institutional strength, playing a pivotal role in shaping corporate behaviour. Robust investor protection mechanisms tend to boost a firm's willingness to invest in innovation. Additionally, shareholder protection safeguards the interests of outside shareholders by assuring them that their investments are secure, thus effectively disciplining managerial behaviour and promoting efficiency in firm investments, particularly in R&D projects (Xiao, 2011). Conversely, weaker investor protection may lead firms to prioritise dividend policy over innovation, especially in uncertain environments (Hasan et al., 2022). On the other hand, shareholder protection enhances the efficiency of corporate investment in R&D projects by reducing both underinvestment and overinvestment, which can impact the relationship between innovation and dividend policy (Xiao, 2011). Moreover, Brown et al. (2013) found that firms in countries with strong legal investor protections tend to use more external equity financing and, over the long term, have R&D levels that are less reliant on internally generated cash flow. This suggests that stronger investor protection may mitigate the negative relationship between innovation and dividend policy by lessening the need for innovation and dividends competing for the same resources. Strong investor protection also reduces managerial opportunistic behaviour, which may divert cash flow for more resource allocation toward value-enhancing projects like R&D (Ghosh and He, 2015). When it comes to strong investor protection, firms may invest more in innovation, thereby creating more value for the firm, which may ultimately translate into higher dividend payments. This then suggests that stronger shareholder protection may mitigate the negative relationship between innovation and dividend policy.

Furthermore, legal protection for shareholders mitigates agency conflicts and resolves under and overinvestment problems related to R&D activities (Xiao, 2011). It also manages the risks associated with R&D investments (Edquist and Johnson, 1997) and fosters an innovation-friendly environment (Krammer, 2015). These findings suggest that in countries with strong investor protection, innovation, and dividend policy are likely to be positively related, as firms can invest in innovation while maintaining high dividend payments. Conversely, when investor protection is weak, innovation efficiency tends to be lower (Xiao, 2011), and misappropriation of firm resources is more likely, thereby exacerbating the negative

relationship between innovation and dividend policy. Therefore, strong investor protection may help to mitigate this negative relationship between innovation and dividend policy, while weak investor protection may exacerbate the negative relationship between the two. This is supported by Hasan et al., (2022), who examined the moderating effects of investor protection and other country-level governance mechanisms on the relationship between R&D investments and dividend payments in BRICS countries. They found that R&D is negatively related to cash dividend payments and that the interaction of investor protection and other country-level mechanisms can make the relationship between R&D intensity and dividend payments positive.

The development of financial markets presents another critical aspect of institutional development. Some have highlighted that well-developed financial systems provide firms with easier access to external capital, reducing their reliance on retained earnings for funding innovative projects. This dynamic can lead to a more favourable attitude toward innovation, as firms can balance dividend payments with external financing opportunities. According to Brown et al., (2013), access to stock market financing is particularly important for investment in research and development (R&D), because the nature of R&D limits a firm's ability to use debt financing. Consequently, the development of financial markets can offer firms enough capital for innovation, and thus leave internal resources for dividend payments. The same is true, namely that underdeveloped financial markets will not provide the necessary capital to meet a firm's needs for innovation activities, thereby exacerbating the negative relationship between innovation and dividend policy. Furthermore, Brown et al., (2013) demonstrate that exogenous variation in access to external equity, resulting from differences in legal rules across countries, significantly affects firm-level investment in R&D. In the same vein, Cecchetti and Kharroubi (2012) and Arcand et al., (2015) show that higher levels of financial market development can create a conducive environment for innovation and economic growth, suggesting that, in countries with developed financial markets, profitability from innovation is high, and may likely lead to high dividend payments. Conversely, in countries with underdeveloped financial markets, investments in innovation may yield lower profitability, resulting in lower dividend payouts. Therefore, the development of financial markets can influence the relationship between innovation and dividend policy, with developed financial markets promoting a positive correlation and underdeveloped financial markets exacerbating the negative relationship.

The rule of law can contribute to an environment in which firms can confidently engage in long-term innovation strategies, potentially influencing the relationship between innovation and dividend policy. Dutta and Roy (2016) define the rule of law as the extent to which the populace has confidence in societal rules and the quality of contract enforcement, property rights, and the judicial system. Therefore, the rule of law measures a country's judicial strength and ensures the strict enforcement of laws (Alam et al., 2018). Previous research has found a significant positive relationship between the legal system and R&D investment (e.g., Alam et al., 2019; Jiao et al., 2015; Seitz and Watzinger, 2017) and patent applications (Canh et al., 2019). Therefore, strong legal systems attract investors, increase investor confidence in R&D, improve firms' R&D investment, and enhance the efficiency of technological innovation, leading to more patent applications (Alam et al., 2019). Conversely, when the rule of law is weak, monitoring is less effective, and corruption tends to be higher, potentially affecting firm profitability generating more agency problems, and leading to a more pronounced negative effect of innovation on dividend policy in such environments. In the same vein, countries with a strong rule of law tend to have legal frameworks that protect intellectual property rights and contracts, providing incentives for firms to invest in research and development activities (Canh et al., 2019). This means that, in countries with a weak rule of law, firms may invest less in R&D (Alam et al., 2019) and produce fewer patents (Canh et al., 2019). Low investment due to weak rule of law can also lead to lower firm profitability (Alam et al., 2019), making it challenging for firms to allocate resources between innovation and dividend payments. Therefore, a weak rule of law can exacerbate a negative relationship between innovation and dividend policy, while a strong rule of law may mitigate it.

Government effectiveness is another measure of institutional quality that encompasses the efficiency and transparency of government institutions. Greater governance effectiveness implies greater accountability and lower corruption. In countries with effective governance, firms are more likely to have high R&D investment (Alam et al., 2019) and produce more patents (Canh et al., 2019), as they can rely on consistent and supportive government policies and institutions. However, when government effectiveness is weak, agency problems are likely to be high, leading to inefficiencies in investments in innovation that affect firm profitability and negatively impact dividend policy. Effective governance, such as strong intellectual property rights (IPRs), provides investor protection, facilitating investment in R&D (Krammer, 2015). Furthermore, investments in innovation may likely be low, as firms are cautious about weak government effectiveness. This may affect firm profitability negatively, making it

difficult for firms to balance resources between innovation and dividend policy. Therefore, weak government effectiveness may exacerbate the negative relationship between innovation and dividend policy, while strong governance effectiveness may mitigate it.

Control of corruption constitutes another measure of institutional quality, capturing perceptions of the extent to which public power is exercised for private gain, including both petty and grand forms of corruption, as well as the 'capture'' of the State by elites and private interests (Hearn, 2015). Low levels of corruption and transparent governance structures are typically associated with environments, where firms are more likely to invest in innovation. High levels of corruption increase investment costs and discourage foreign investors, leading to a negative relationship between R&D investment and corruption in emerging markets (Alam et al., 2018). In the same vein, Canh et al., (2019) and Tebaldi and Elmslie (2013) show that firms in countries that control corruption have high patent production, and thus have high innovative activities. Furthermore, reduced corruption risks enhance the likelihood that resources allocated to innovation will yield favourable returns, making it more attractive for firms to prioritise innovation over immediate dividend payouts. Therefore, when corruption is high or control of corruption is low, any investment in innovation may yield low firm profitability thus impacting dividend policy negatively making it hard for them to balance investing in innovation and paying dividends. This suggests that high corruption may exacerbate the negative relationship between innovation and dividend policy while low corruption mitigates it.

In summary, the relationship between innovation and dividend policy may not be static but influenced by institutional development. Prior research (e.g., Hasan et al.,2021) indicates that investor protection and governance moderate the innovation-dividend relationship, with weaker institutional development potentially exacerbating the negative association between innovation and dividend policy, while stronger institutional development may mitigate it. However, existing research lacks clarity on the specific factors that moderate this relationship. Furthermore, most studies have focused on developed markets and South Africa, rather than examining the entire African continent.

In studying whether investor protection, development of financial markets, the rule of law, government effectiveness, and control of corruption moderate the innovation-dividend relationship, this research aims to bridge this gap by offering insights tailored to the diverse institutional landscape of African countries. By investigating how institutional quality

influences the relationship between innovation and dividend policy across various African contexts, the study seeks to provide new perspectives and valuable contributions to the existing literature. Through rigorous empirical analysis and comprehensive consideration of institutional factors, this research aims to enhance understanding of corporate finance dynamics in African markets, thereby offering practical implications for investors, policymakers, and corporate decision-makers.

3.3 Hypothesis development

3.3.1 Hypothesis for innovation and dividend policy

This study hypothesizes a negative correlation between innovation and dividend policy within the African context, where unique economic and institutional dynamics shape corporate strategies. Several mechanisms underpin this relationship. Firstly, heightened information asymmetry among innovative firms, which tightly safeguard proprietary information, diminishes their attractiveness to external financing sources (Kamien & Schwartz, 1978; Lee & Lee, 2019; Myers & Majluf, 1984; Lasfer, 2002). Consequently, these firms rely more on internal funding, reducing available funds for dividend payouts. According to the residual theory of dividends, firms prioritize investments in innovation over distributing dividends, particularly when substantial R&D investments are necessary (Lasfer, 2002). Moreover, the potential adverse impacts of innovation on firm performance, stemming from increased risks, costs, and uncertainty associated with R&D activities, prompt firms to retain earnings to buffer against these risks, further limiting funds available for dividends (McGee et al., 1995; Vermeulen et al., 2005; Guerrero-Villegas et al., 2018).

In the African context, economic and political uncertainties, limited access to capital markets, and weak governance and institutional frameworks exacerbate these challenges. Firms often prioritize internal financing and retain earnings over distributing dividends to navigate these uncertainties (D'Agostino et al., 2016; Munisi et al., 2014; Lemi & Asefa, 2003; Lupu & Riedl, 2013). Limited intellectual property protection also deters substantial investments in innovation, prompting firms to retain earnings as reserves against potential losses or for reinvestment, rather than distributing them as dividends (Kaplan, 2009). Furthermore, managers of innovative firms may prefer to reinvest earnings into R&D to increase the firm's growth prospects and power, aligning with agency theory predictions (Jensen, 1986).

Empirical studies consistently demonstrate a negative relationship between innovation and dividend policy globally, including within African markets (e.g., Boumosleh & Cline, 2015; Fama & French, 2001; Gugler, 2003; Hasan et al., 2022; Lee & Lee, 2019). Firms in

Africa, constrained by limited resources, often prioritize allocating funds to innovation projects requiring substantial and sustained financial commitments (Kamien & Schwartz, 1978; Lee & Lee, 2019). This strategic focus leaves fewer resources for immediate dividend distributions to shareholders. Moreover, innovation's inherent risks and uncertainties, compounded by economic volatility, political instability, and regulatory challenges, compel firms to retain earnings to bolster financial reserves, further diminishing funds available for dividends (McGee et al., 1995; Vermeulen et al., 2005).

The high level of information asymmetry surrounding innovative activities in Africa deters external investors, raising the cost of external financing and prompting firms to rely more on internal funding sources (Myers & Majluf, 1984; Lasfer, 2002). Weak institutional frameworks and limited intellectual property protections additionally constrain access to external capital for innovation, reinforcing firms' preference for self-financing through retained earnings over distributing dividends (Lemi & Asefa, 2003; Kaplan, 2009). Furthermore, managers and shareholders often prioritize long-term growth and competitive positioning through continuous innovation, opting to reinvest earnings into R&D to enhance market resilience and future profitability (Jensen & Meckling, 1976; Guerrero-Villegas et al., 2018). This strategic emphasis on growth frequently supersedes immediate dividend distributions, reflecting the trade-offs that African firms navigate between funding innovation initiatives and delivering shareholder returns.

Therefore, investigating these complex dynamics in Africa not only enhances the understanding of how innovation impacts dividend policy but also validates theories through empirical evidence grounded in the continent's unique economic, political, and institutional realities.

Based on the above discussion, we propose the following hypothesis:

H1. Innovation is negatively related to dividend policy, with firms prioritizing innovation expected to pay lower dividends.

3.3.2 Hypothesis for innovation, dividend policy, and institutional development.

We posit that the correlation between innovation and dividend policy in African firms is not fixed; rather, it is contingent on the quality and effectiveness of the institutional environment within which these firms operate. This study proposes that the relationship between innovation and dividend policy in African firms is contingent upon the quality of the institutional environment within which these firms operate. Institutional development,

encompassing aspects such as investor protection, control of corruption, financial market development, rule of law, and government effectiveness, plays a crucial role in shaping firms' strategic decisions regarding both innovation investments and dividend distributions (La Porta et al., 2002; Denis & Sibilkov, 2010; Claessens et al., 2001).

Institutional development, encompassing aspects such as investor protection, control of corruption, financial market development, rule of law, and government effectiveness, plays a crucial role in shaping firms' strategic decisions regarding both innovation investments and dividend distributions (La Porta et al., 2002; Denis & Sibilkov, 2010; Claessens et al., 2001). Hasan et al., (2022) provide empirical evidence that investor protection and other country-level governance mechanisms moderate the relationship between R&D investments and dividend payments in BRICS countries, suggesting that institutional development indeed moderates the innovation-dividend policy relationship.

Weak institutional environments prevalent in many African countries exacerbate uncertainty, increase risk premiums, and contribute to inefficiencies in innovation investments (Alam et al., 2018; Xiao, 2011). Firms in these contexts often face higher costs associated with innovation projects, limiting profitability from R&D activities and leading to a reliance on retained earnings for innovation funding (Xiao, 2011). Conversely, strong institutional frameworks provide a conducive environment for innovation by enabling firms to access external capital markets, thus preserving internal resources for dividend distributions while investing in innovation (Brown et al., 2013). Well-developed financial markets facilitate easier access to external financing, allowing firms to effectively balance dividends with innovation investments (Hsu et al., 2014; Cecchetti & Kharroubi, 2012; Arcand et al., 2015).

Furthermore, robust legal systems and effective governance structures attract investment, enhance R&D efficiency, and positively influence the relationship between innovation outcomes and dividend policy (Jiao et al., 2015; Seitz & Watzinger, 2017). In contrast, weaker rule of law and governance effectiveness contribute to higher agency costs and diminish returns from innovation investments, thereby exacerbating the negative impact on dividend policy (Canh et al., 2019; Cecchetti & Kharroubi, 2012). Corruption in environments characterized by weak governance undermines investor confidence, increases business costs, and reduces innovation profitability, further weakening the link between innovation success and dividend distributions (Alam et al., 2019; Canh et al., 2019).

Given these dynamics, this hypothesis posits that variations in institutional development significantly influence how innovation activities impact dividend policy in African firms. Stronger institutional environments are expected to mitigate the negative impact observed in weaker institutional contexts by providing better access to external financing, reducing risk premiums, and enhancing innovation efficiency. Conversely, weaker institutional environments in Africa amplify challenges firms face in balancing innovation investments with dividend distributions, underscoring the nuanced role of institutional quality in shaping corporate financial policies across the continent.

Given these dynamics, the study proposes the following hypothesis:

H2: *Institutional development in African firms moderates the relationship between innovation and dividend policy, with weaker institutions exacerbating the negative association and stronger institutions mitigating it.*

3.4 Data and Research Design

3.4.1 Data and Sampling

Data for the firm-specific variables were sourced from the Bloomberg financial database, encompassing non-financial firms listed on various African stock exchanges. Both the dependent variables and firm-specific independent variables were derived from the income statements, balance sheets, and cash flow statements of the selected sample firms. This data was collected within the inclusive timeframe of 2006 to 2020, chosen primarily due to data availability. Information regarding measures of innovation was procured from the World Development Indicators (WDIs) provided by the World Bank and the World Intellectual Property Organization (WIPO). Additionally, data on institutional variables was obtained from the World Bank Governance Indicators, which aggregates insights on governance quality from a diverse array of enterprises, citizens, and experts across advanced and developing countries (Donadelli et al., 2014).

This thesis scrutinises a total sample comprising 260 firms hailing from six African countries, namely: Egypt, Kenya, South Africa, Morocco, Tunisia, and Zambia.[2] These countries were selected because data on measures of innovation during the specified period was solely available. Moreover, this sample includes the largest stock markets in Africa, such

[2] Countries such as Tanzania, Mauritius, Ghana, Uganda, Botswana, Nigeria, and Namibia were excluded due to missing innovation data for all years considered, ensuring consistency and reducing bias. This preserves sample homogeneity, enhancing result validity and facilitating clearer interpretation. Employing System GMM necessitates consistent panel data, aligning with methodological requirements and bolstering result robustness.

as South Africa and Egypt. It is important to note that this study concentrates exclusively on non-financial firms, deliberately excluding financial companies and utilities, consistent with De Cesari and Ozkan (2015), Hasan et al., (2022), and other relevant studies. Firms with missing values for the dependent variable in Bloomberg over the period from 2006 to 2020 were also excluded, aligning with prior research practices (e.g., Boţoc & Pirtea, 2014; Fidrmuc & Jacob, 2010). A summary of the sample distribution is provided in Table 3.1.

Table 3.1 Sample distribution

Country	Number of firms	% of the sample
Egypt	62	23,85
Kenya	18	6.92
South Africa	132	50,77
Morocco	29	11,15
Tunisia	13	5,00
Zambia	6	2,31
Total	260	100

3.4.2 Measurement of variables

3.4.2.1 Measurement of Dividend Payout Ratio

The assessment of the dividend payout ratio (*DPR*) relies on two variables, namely: The dividend payout ratio is assessed using two key metrics: dividends to assets (DIVASSETS) (Boţoc and Pirtea, 2014; Burns et al., 2015) and dividends to total sales (DIVSALES) (Gonzalez et al., 2017). Data on these ratios are obtained from Bloomberg, and chosen for their prominence in dividend policy research. DIVASSETS is particularly favoured due to its widespread adoption in numerous studies, addressing concerns related to pricing and earnings volatility (Boţoc & Pirtea, 2014). This ratio adjusts for firm size differences, allowing for standardised comparisons across companies of varying scales (La Porta et al., 2000). It offers insights into how effectively firms use their assets to generate shareholder returns, thereby assessing financial stability and capital allocation efficiency (Fama & French, 2001; Baker & Wurgler, 2004). However, firms with substantial intangible or non-productive assets may appear less efficient in dividend distribution, potentially skewing comparisons (Brown & Caylor, 2006). Moreover, companies undergoing significant capital investments may exhibit distorted payout ratios as asset bases expand without immediate revenue generation (Damodaran, 2012). Variations in asset valuation practices across companies and countries can also affect the ratio's comparability and reliability (Basu, 1997). Despite these challenges, the dividends to assets ratio remains integral in financial analysis and modelling dividend policy

due to its ability to standardize comparisons and provide insights into asset utilization and strategic management.

In contrast, DIVSALES serves as a supplementary metric despite its limitations in reflecting a firm's earnings condition accurately (Breuer et al., 2014). This ratio directly links dividend payments to company revenue, offering insights into dividend policy relative to income (Miller & Modigliani, 1961; Baker & Powell, 2012). It highlights how efficiently companies convert sales into shareholder returns, indicating operational efficiency in dividend distribution and facilitating industry comparisons based on revenue generation capabilities (Damodaran, 2012). However, differing profit margins among companies can complicate direct comparisons of dividend to sales ratios (Asquith & Mullins, 1986). Additionally, non-recurring or extraordinary items in sales figures can distort the ratio, impacting its reliability as a long-term dividend policy indicator (Damodaran, 2012). Furthermore, focusing solely on dividends relative to sales may not fully capture a company's financial health and dividend policy (Miller & Modigliani, 1961). Despite these drawbacks, the dividends to sales ratio remain widely used in modelling dividend policy due to its direct linkage of dividends to revenue, offering valuable insights into income distribution strategies and operational efficiency across industries.

2.4.2.2 Measurement of Innovation

In the assessment of innovation, the literature endorses two primary measures: (i) Research and Development (R&D) expenditures, as advocated by Belloc et al., (2013); and (ii) patenting activity, as explored by Fang, Tian, and Tice (2014). Among these measures, patenting activity is considered a superior proxy for innovation. It not only quantifies innovation output, but also encapsulates how efficiently a firm has harnessed its innovation resources, both observable and unobservable (Fang et al., 2014). Additionally, it serves as a distinctive resource for analysing the technical change process, as highlighted by Griliches (1990) and Tebaldi and Elmslie (2013). On the other hand, R&D expenditures represent only one observable input and fall short of capturing the qualitative aspects of innovation. Unfortunately, it did not prove possible to access R&D data for African firms on Bloomberg, likely due to their limited reporting, and hence, it proved impossible to employ it as an innovation measure.

The study employs patent data as a metric to gauge innovation at the country level, represented by the logarithm of total patent applications. This approach aligns with established research (Canh et al., 2019; Fang et al., 2014; Tebaldi & Elmslie, 2013) where patent statistics are widely accepted in the literature as a measure of innovation efforts (Khoury & Peng, 2011).

Data on innovation is sourced from the World Development Indicators (WDIs) provided by the World Bank and the WIPO website. While patent applications are a common proxy for technological knowledge and innovation (Barra & Zotti, 2016; Bilbao-Osorio & Rodriguez-Pose, 2004; Bottazzi & Peri, 2007; Porter & Stern, 2000), it's acknowledged that patents only partially encapsulate technological advancements (Voutsinas et al., 2018). Despite limitations, such as the exclusion of unpatented innovations and varying patent quality (Jaffe & Trajtenberg, 2002; Tebaldi & Elmslie, 2013), patents remain a valuable indicator due to their concrete and comparable nature across countries and time (Stern et al., 2000).

Furthermore, patent applications offer advantages over R&D expenditures in capturing innovation spillovers. They signal the development of novel technologies deemed commercially valuable by inventor firms and facilitate technology diffusion through open disclosure, benefiting both competitors and supplier industries (Eaton & Kortum, 1996; Maskus, 2004). Despite patent applications originating from diverse sources beyond listed firms, including research institutions and individual inventors, their use in this study reflects the significant role of listed firms in national innovation efforts. Thus, while recognizing the limitations of patents as a sole measure of innovation, their analysis provides critical insights into national innovation dynamics that influence the dividend policies of listed firms.

To ensure the robustness of our analysis, we follow the approach suggested by Belloc et al., (2013) and weigh total patent applications by the population, thereby making country-level data comparable. Although an alternative option is to weight by GDP, Belloc et al., (2013) caution against this, as a two-way relationship between the number of patents and GDP may introduce estimation bias. The study sources population data from the WDI database for this purpose.

2.4.2.3 Measurement of Institutions

In both corporate finance and institutional literature, institutions are often measured using a set of common indicators, including investor protection, financial market development, government effectiveness, control of corruption, governance effectiveness, and the rule of law (See., Almaskati et al., 2020; Orlova & Sun, 2018; Machokoto et al., 2021). This study employs these five indicators as proxies for assessing the quality of institutional development or institutional strength.

To gauge investor protection (*INVPRO*), which reflects the extent to which shareholders can safeguard themselves against potential misuse of corporate assets by management and directors for personal gain, we calculate the *INVPRO* index as the average of the Extent of

Disclosure Index, the Extent of Director Liability Index, and the Ease of Shareholder Suits Index. This method aligns with prior research (e.g., Athari et al., 2016; Athari, 2022; Goyal & Muckley, 2013; Orlova & Sun, 2018). The *INVPRO* index yields scores ranging from 0 to 100, with higher values indicating stronger institutional strength. In addition, we incorporate the Financial Market Index (*FMI*), as introduced by Machokoto et al., (2021) and Tebaldi & Elmslie (2013), to assess the development of financial markets. This index operates on a scale of 0 to 1, with higher values signifying better institutional strength. The data is sourced from the International Monetary Fund (IMF) website. As for the remaining institutional development indicators such as control of corruption, government effectiveness, and the rule of law, these are measured on a scale from approximately -2.5 (indicating weak institutional quality) to 2.5 (representing strong institutional quality), following previous studies (see Alam et al., 2019; Canh et al., 2019; Machokoto et al., 2021). While there may be other measures of institutional strength, some were omitted from consideration, due to high correlations among these proxies for institutions (as observed in La Porta et al., 1999; Glaeser et al., 2004). Moreover, the choice of institutional measure for empirical analysis is often made on an ad hoc basis, as noted by Tebaldi & Elmslie (2013).

For more information on how variables are measured and their sources, refer to Table 3.2.

Table 3.2: Variable Measurement and Data Sources

Variables	Variable definition	References
Dividend to assets (*DivAssets*)	Dividend paid dividend by total assets	(Boţoc & Pirtea, 2014; Burns et al., 2015, Lee & Lee, 2019)
Dividend to Sales (*DivSales*)	Dividend paid dividend by sales	(Breuer et al., 2014 ; Gonzalez et al., 2017)
Innovation (*Innov*)	The natural logarithm of total patent applications by residents and non-residents	(Fang et a l., 2014; Canh et al., 2019; Raghupathi & Raghupathi, 2017; Tebaldi & Elmslie, 2013)
Profitability (*ROA*)	The ratio of the profit after tax but before interest to total assets	(Alzahrani & Lasfer, 2012; Attig et al., 2016; Burns et al., 2015)
Tobin's Q estimation (*tobinsQ)*	The sum of the book value of debt and market value of equity divided by the book value of total assets	(Arko et al. 2014; Burns et al., 2015; He et al., 2016; Ngo et al., 2020), Boumosleh and Cline (2015)
Firm size (*size)*	Net Assets divided by total assets	(Boţoc & Pirtea, 2014)
Firm age (a*ge*)	Log of number of years since incorporation	(Acquaah, 2015; Ali et al., 2017; Al-Najjar & Kilincarslan, 2018; Lahiri & Chakraborty, 2014)

Cash holding (*cashratio)*	Cash divided by assets	(Burns et al., 2015; Boţoc & Pirtea, 2014)
DebtRatio (*debtratio*)	The sum of short-term and long-term debt as a percentage of the total assets	(Burns et al., 2015; Boţoc & Pirtea, 2014)
GDP growth (*gGDP*)	The growth in gross domestic product	(Aivazian et al., 2003;Machokoto et al., 2021)
Investor Protection (*InvPro*)	The average of the Shareholder Rights Index (ShInd), the Director's Liability Index (DirLia), and the Disclosure Index (DisInd). The Strength of Investor Protection Index is the average of the Extent of Disclosure Index, the Extent of Director Liability Index, and the Ease of Shareholder Suits Index. The score ranges from 0 to 100, where 0 represents the worst regulatory performance and 100 the best regulatory performance.	(Athari et al., 2016 ;Athari, 2022; Goyal & Muckley, 2013 ;Orlova & Sun, 2018)
Financial Markets Index (*FMI*)	The Financial Markets index (FMI) is a combination of the Financial Markets Depth index (FMD), Financial Markets Efficiency index (FME), and Financial Markets Access index (FMA). Source: https://data.imf.org	(De Vita et al., 2022; Machokoto et al., 2021; Svirydzenka, 2016)
PropertyRights (*PR*)	Property rights indicate the level of economic freedom concerning property rights security. Source: https://www.fraserinstitute.org/economic-freedom/approach	(Ghoul et al., 2017; Machokoto et al., 2021; Orlova and Sun. 2018)
Government effectiveness (*Goveff*)	Government effectiveness is an index that captures the perception of the quality of civil and public services and the extent of their independence from (political) pressures regarding interference in policy formulation and implementation	(Almaskati et al., 2020; Dittmar et al., 2003; Machokoto et al., 2021; Orlova and Sun. 2018)
Control of Corruption (*CCI*)	The control of corruption variable ranges from approximately –2.5 (weak control meaning high corruption) to 2.5 (strong control meaning low corruption	(Alam et al., 2019; Bohara et al., 2004; Burns et al., 2021)
Rule of Law (*Rullaw*)	The rule of law indicates the degree of confidence that agents have in and abide by the rules of society	(Almaskati et al., 2020; Dittmar et al., 2003; Machokoto et al., 2021; Orlova and Sun (2018)

3.4.3 Estimation methods

In this analysis, several estimation models are available, such as instrumental variable (IV) estimators, two-stage least squares (2SLS), and System GMM. This study employs System GMM, as promoted by Arellano and Bover (1995) as well as Blundell and Bond (1998), to estimate the effects of innovation on dividend policy. This choice aligns with Athari (2022) and Hasan et al., (2022), incorporating both levels and first difference equations, outperforming the difference-GMM methodology (Athari, 2022). System GMM offers effectiveness in

handling situations with a small number of time units (t=15) and many cross-sections (i=260), as is the case in our study. Additionally, this form of estimation is well-suited for capturing the time-series dynamics of the data and addressing potential endogeneity issues. By utilising this approach, it is more feasible to handle unobservable heterogeneity, reduce estimation bias (Hasan et al., 2022), control for lagged effects, and minimise omitted variable bias—all of which are crucial when examining complex relationships over time. Endogeneity presents a potential concern in our model because, just as innovation can lead to high dividends, high dividends can also impact innovation. While endogeneity can be addressed using IV estimators, it is worth noting that some researchers have questioned their use (Dutta & Roy, 2016). For instance, Murray (2006) and Baum (2008) have raised concerns about the finite-sample properties of IV estimates. Similarly, Clemens et al. (2012) note that IV estimators may not necessarily improve upon OLS estimators, particularly when the instruments are weak. Additionally, Persson and Tabellini (2006) highlight the challenges of finding efficient, time-varying instruments that are strictly exogenous.

It is necessary to refrain from using 2SLS as it is considered a weaker estimator compared to the System GMM estimator, especially in the presence of heteroscedasticity (Lin and Lee, 2010). Consequently, endogeneity is addressed by employing a two-step System GMM for the estimation of dynamic balanced panel data. Another advantage of the System GMM estimator is its suitability for handling linear models with country-fixed effects, making this a preferred choice. Moreover, System GMM estimators can effectively mitigate the bias associated with fixed effects in short panels and resolve endogeneity issues in dynamic panel data. They are also more efficient than one-step estimators (Canh et al., 2019). Overall, system GMM enables the study to effectively account for unobservable heterogeneity, mitigate endogeneity issues, reduce estimation bias, control for lagged effects, and minimise omitted variable bias—all of which prove essential considerations when examining complex relationships over time. Furthermore, the analysis utilises the xtabond2 package, as suggested by Roodman (2009), and executes it within Stata Software.

To ensure robust analysis, the dataset underwent winsorisation at the top and bottom 5% for each year. This procedure was carried out to mitigate the influence of outliers, a practice supported by prior studies such as Adhikari and Agrawal (2018), Alzahrani and Lasfer (2012), and Athari (2022), among others.

In addition to the GMM approach, the study follows the methodology proposed by Boţoc and Pirtea (2014). Specifically, three key options are applied: (1) the orthogonal option to maximise the sample size, particularly relevant due to panel data with gaps; (2) the collapse option to prevent instrument proliferation; and (3) a two-step estimation with the robust option to address standard error correction. Moreover, to account for different fixed effects associated with countries and years, the analysis includes country and year dummies. This practice aligns with the approach taken by Athari (2022), Boţoc and Pirtea (2014), and Gul et al., (2015). According to Gul et al., (2015), the incorporation of country dummies should, to some extent, capture the endogeneity concerns related to potentially omitted country-level variables.

To investigate whether the relationship between innovation and dividend policy is contingent on institutional strength, the study divides the sample into two subgroups. Specifically, it categorises the countries into above-median (high) and below-median (low) groups for each of the corresponding non-dichotomous institutional factors, following the approaches of Machokoto et al., (2021), Orlova & Sun (2018), and Dittmar et al., (2003). This categorisation is based on whether the attribute under consideration is present or absent. Each country in the sample is placed into one of two subsamples, either above or below the median values, for each institutional variable (e.g., high vs. low institutional development). Indicator variables take a value of one if the institutional variable is above the median and zero otherwise. The measures of institutional development under scrutiny encompass investor protection, financial market development, government effectiveness, control of corruption, and the rule of law, as highlighted in prior research (Almaskati et al., 2020; Canh et al., 2019; Hasan et al., 2022; Orlova & Sun, 2018; Machokoto et al., 2021; Tebaldi & Elmslie, 2013).

3.4.4 Model specification

The study mitigates any concerns about endogeneity by utilising dynamic panel estimators. These estimators enable us to tackle endogeneity issues without the necessity of identifying strictly exogenous instruments, making them increasingly favoured in recent empirical panel studies (Dutta & Roy, 2016). To explore the relationship between innovation and dividend policy, the study adopts the primary specification from Athari (2022), Yang et al. (2020), and Boţoc & Pirtea (2014), as follows:

$$DPR_{ijt} = \alpha + \beta_1 DPR_{ijt-1} + \beta_2 Innov_{jt} + \beta_{6-11} FirmControls_{ijt} + \beta_{12} CountryControls_{jt} + \varepsilon_{it} \quad \textbf{(3.1)}$$

Where DPR_{ijt} represents the dividend payout ratio measured as discussed in the section above. DPR_{ijt-1} is the dividend payout ratio at time *t-1* and $INNOV_{it}$ measures innovation. The proxies for innovation are also highlighted in Table 3.2 above. We also include a set of control variables $FirmControls_{ijt}$, which are controls at the firm level namely, (i) *size of the firm, Tobins q, cash ratio, debt Ratio, profitability (ROA), age of the firm,* and $\beta_{12}CountryControls_{jt}$ are controls at the country level which is *GDP growth.* Further details and data sources for these control variables are provided in Table 3.2.

This section provides a literature-based rationale for the choice of control variables.

In line with prior research (Alzahrani & Lasfer, 2012; Attig et al., 2016; Burns et al., 2015), it is necessary to examine the empirical implications of signalling theory by including firm profitability as a control variable. Firm profitability is defined as the ratio of profit after tax but before interest to total assets, denoted as *ROA (*Burns et al., 2015; Dewasiri et al., 2019). To investigate the influence of agency costs, it is necessary to consider the ratio of cash and cash equivalents to total assets (*CASHRATIO*) as a control variable, following the approach of Boţoc and Pirtea (2014) and Burns et al., (2015). Past studies suggest that firms with exceptionally high cash ratios are more inclined to offer larger dividends. It is also necessary to incorporate firm size (*SIZE*), measured as Net Assets divided by total assets, following Boţoc and Pirtea (2014). Extensive prior research consistently demonstrates that larger firms tend to have higher dividend payouts (e.g., Al-Najjar and Hussainey, 2009; Fama and French, 2001; Holder et al., 1998). Our control variable Tobin's Q (*TOBINSQ*) calculated as the sum of the book value of debt and the market value of equity, divided by the book value of total assets, aligning with the methodologies of Arko et al., (2014), Burns et al., (2015), and Boumosleh and Cline (2015). Tobin's q captures growth opportunities, which are known to influence dividend policy. The total debt to total assets ratio (*DEBTRATIO*) is another control variable we incorporate, following various research studies (e.g., Arko et al., 2014; Boţoc & Pirtea, 2014; Burns et al., 2015; Kaźmierska-Jóźwiak, 2015; Nuhu, 2014). The prevailing argument is that firms with high debt ratios tend to offer lower dividends due to obligations associated with debt contracts and the imperative to minimise firm risk. In alignment with previous scholarly works (e.g., Ali et al., 2017; Al-Najjar & Kilincarslan, 2018; Lahiri & Chakraborty, 2014), we introduce firm age (*AGE*) as a variable, represented by the natural logarithm of the years since establishment. Lastly, following the approach of Aivazian et al., (2003) and Machokoto et al., (2021), we account for country-specific characteristics by including the growth of GDP as a

control variable. This provides insight into the level of country development and its potential influence on dividend policy.

3.5 Empirical results

3.5.1 Descriptive statistics

3.5.1.1 Summary statistics for the entire sample

Table 3.3 presents descriptive statistics for the entire sample, encompassing key metrics such as mean, median, standard deviation, number of observations, and the minimum and maximum values for all variables. The mean DPR, as indicated by the variable *DIVASSETS*, is 0.033, while that derived from *DIVSALES* is 0.049. Notably, the mean payout ratio aligns with those observed in other emerging markets, as demonstrated by Boţoc and Pirtea (2014). Turning to the independent variable of innovation (*INNOV*), firms within our sample exhibit an average total patent application of 4410.143. This figure, although noteworthy, is comparatively lower than the corresponding values in developed markets, such as the United States and the United Kingdom, as reported by Raghupathi and Raghupathi (2017).

Examining institutional variables, the average investor protection (*INVPRO)* stands at 62.37, signifying a moderately robust investor protection environment across the investigated countries. The Control of Corruption Index (*CCI)* reflects a low score of -0.23, suggesting a prevalent issue of corruption in the African context. Government effectiveness, denoted by the Government Effectiveness Index (*GOVEFF*), is moderate at 0.291. The Rule of Law Index (*RULLAW*) registers at -0.127, highlighting a suboptimal state of the rule of law in Africa. Furthermore, the Financial Market Index (*FMI*) averages 0.357, indicating relatively underdeveloped financial markets in the African context.

Regarding control variables, firms demonstrate a return on assets (*ROA*) of 0.066, a Tobin's Q ratio (*TOBINSQ*) of 1.493, a cash ratio (*CASHRATIO*) of 0.103, a debt ratio (*DEBTRATIO*) of 0.178, and an average growth rate of GDP (*gGDP*) at 1.08 percent.

Table 3.3: Summary statistics

Variable	Obs	Mean	Median	Std. Dev.	Min	Max
DivAssets	3900	0.033	0.015	0.044	0	0.156
DivSales	3900	0.049	0.018	0.069	0	0.248
Totalpatents	3900	4410.143	6383	3001.737	13.000	8317.000
Patentbyresidents	3874	591.396	656.000	285.125	2.000	1027.000
Patentbynonresidents	3874	3846.312	5562	2815.414	9.000	7402.000
Population	3900	57540788	53900000	23746487	10483558	1.075e+08
gGDP	3900	1.080	1.551	2.777	-9.692	7.130
TobinsQ	3835	1.493	1.223	0.776	0.630	3.508
Age	3900	43.582	39.000	27.559	1.000	140.000
Cashratio	3899	0.103	0.070	0.098	0.004	0.361
ROA	3878	0.066	0.059	0.086	-0.112	0.247
Debtratio	3896	0.178	0.138	0.168	0	0.544
Size	3900	0.512	0.511	0.213	0.097	0.877
InvPro	3900	62.858	80.000	18.853	33.333	80.000
PR	3900	6.191	5.870	1.231	4.530	8.110
FMI	3900	0.357	0.410	0.144	0.070	0.530
Goveff	3900	0	0.291	0.436	-0.809	0.480
CCI	3900	-0.230	-0.086	0.383	-1.093	0.452
Rullaw	3900	-0.127	-0.102	0.263	-0.663	0.183

Notes: The table shows the firm-specific innovation and institutional variables summary statistics for our set of six African countries for the period 2006 to 2020. The data are winsorised at the top and bottom 5% for each year to control for the effect of outliers. The dividend payout ratio is measured using *DIVASSETS,* which is the dividend paid divided by total assets, and *DIVSALES,* which is the dividend paid divided by sales, *INNOV* is the innovation measured as the natural logarithm of total patents application. *INVPRO* is the investor protection index and ranges from 0 to 100, *FMI* is the Financial Markets Index, measuring the development of financial markets, and ranges from 0 to 1, *GOVEFF* is the Governance Effectiveness Index and ranges from -2.5 to 2.5, *CCI* is the Control of Corruption Index, and ranges from -2.5 to 2.5, *RULLAW* is the Rule of Law Index and ranges from -2.5 to 2.5, *TOBINSQ* is the sum of the book value of debt and market value of equity divided by the book value of total assets, *SIZE* is net assets divided by total assets, *CASHRATIO* is cash and cash equivalents divided by assets, the *DEBTRATIO* is the sum of short-term and long-term debt as a percentage of the total assets, *ROA* is the return on assets, which constitutes profit after tax, but before interest to total assets, where *AGE* is the natural logarithm for the number of years since incorporation, and *gGDP* is the growth in gross domestic product.

3.5.1.2 Summary Statistics Across Countries

Table 3.4 provides an overview of summary statistics for various countries. The table reveals that the sample encompasses a diverse set of countries, with varying percentages of total companies represented: 23.85% for Egypt, 6.92% for Kenya, 11.15% for Morocco, 50.77% for South Africa, 5% for Tunisia, and 2.31% for Zambia. In total, the sample comprises 260 companies. Notably, South Africa stands out as the largest contributor, accounting for 50.77% of the entire sample.

Analysing the descriptive statistics, it is possible to observe that Egypt and South Africa have the highest and lowest mean dividend payout ratios (*DPR*) at 0.047 and 0.025, respectively. In terms of innovation activity, South Africa boasts the highest mean total patent applications at 7285.667, while Zambia has the lowest at 28.733.

Turning to investor protection (*INVPRO*), South Africa leads with a mean score of 80, whereas Egypt trails with a mean of 40. Similarly, the development of financial markets (*FMI*) is most pronounced in South Africa (mean of 0.462) and least pronounced in Tunisia (mean of 0.075). Examining control of corruption (*CCI*), South Africa exhibits lower corruption levels with a mean of control of corruption of 0.085, while Kenya faces higher corruption levels with a mean of -0.953. Government effectiveness (*GOVEFF*) is more substantial in South Africa, with a mean of 0.379, but weaker in Zambia, with a mean of -0.657. Conversely, the rule of law (*RULLAW)* is stronger in South Africa (mean of 0.072) and weaker in Kenya (mean of -0.566).

The debt ratio (*DEBTRATIO*) varies across countries, with Tunisia having the highest mean at 0.214 and Kenya the lowest at 0.132. Profitability (*ROA*) is highest in Zambia, with a mean of 0.092, and lowest in Tunisia, with a mean of 0.031. Finally, the cash ratio (CASHRATIO) shows Egypt with the highest mean at 0.138 and Morocco with the lowest mean at 0.052.

When considering the GDP growth, Egypt exhibits the highest mean at 2.385, while South Africa has the lowest at 0.437. These statistics underscore the heterogeneity of institutional and firm factors among our sample countries, affirming the suitability of cross-country analysis for our research. Furthermore, they highlight the varying levels of institutional development captured by our institutional factors.

Table 3.4: Summary statistics across countries (Mean across countries)

Variable	Total	Egypt	Kenya	South Africa	Morocco	Tunisia	Zambia
DivAssets	0.033	0.047	0.042	0.025	0.036	0.029	0.045
DivSales	0.049	0.069	0.057	0.038	0.047	0.049	0.051
Totalpatents	4410.143	2129.867	217.933	7285.667	1447.4	523.667	28.733
Patentbyresidents	591.396	728.200	138.800	738.333	208.267	135.000	11.733
Patentbynonresidents	3846.312	1401.667	79.133	6547.333	1239.133	422.615	17.000
Population	57540788	93665274	44640086	54024633	33783528	11303934	15318543
gGDP	1.282	2.385	1.823	0.437	2.221	1.333	2.211
tobinsQ	1.493	1.351	1.531	1.495	1.676	1.483	2.003
Age	42.952	41.059	53.515	41.978	47.405	37.677	42.167
Cashratio	0.103	0.138	0.086	0.105	0.052	0.053	0.087
ROA	0.066	0.072	0.078	0.065	0.062	0.031	0.092
Debtratio	0.178	0.158	0.132	0.183	0.211	0.214	0.182
Size	0.512	0.557	0.559	0.498	0.469	0.490	0.468
InvPro	62.858	40.000	55.111	80.000	45.556	50.000	56.667
PR	6.191	5.615	4.790	6.829	5.596	6.291	4.985
FMI	0.357	0.341	0.073	0.462	0.248	0.075	0.187
Goveff	0	-0.567	-0.458	0.379	-0.119	0.053	-0.657
CCI	-0.230	-0.657	-0.953	0.085	-0.300	-0.132	-0.462
Rullaw	-0.127	-0.399	-0.566	0.072	-0.187	0.009	-0.404
Number of firms	260	62(23.85%)	18(6.92%)	132(50.77%)	29(11.15%)	13(5%)	6(2.31%)
Number of Observations	3,900	930	270	1,980	435	195	90

Notes. The table shows the summary statistics across six African countries for the period 2006 to 2020. The data are winsorised at the top and bottom 5% for each year to control for the effect of outliers. The dividend payout ratio is measured using *DIVASSETS,* which is the dividend paid divided by total assets and *DIVSALES,* which is the dividend paid divided by sales, *INNOV* is the innovation measured as the natural logarithm of total patents application, *INVPRO* is the Investor Protection Index and ranges from 0 to 100, *FMI* is the Financial Market Development Index and ranges from 0 to 1, *GOVEFF* is the Governance Effectiveness Index and ranges from -2.5 to 2.5*, CCI* is the Control of Corruption Index and ranges from -2.5 to 2.5, *RULLAW* is the Rule of Law Index and ranges from -2.5 to 2.5, *TOBIN Q* is the sum of the book value of debt and market value of equity divided by the book value of total assets, SIZE is net assets divided by total assets, *CASHRATIO* is cash and cash equivalents divided by assets, the *DEBTRATIO* is the sum of short-term and long-term debt as a percentage of the total assets, *ROA* is the return on assets, which refers to profit after tax but before interest to total assets, *AGE* is the natural logarithm for the number of years since incorporation, and *gGDP* is the growth in GDP.

3.5.2 Pearson's correlation matrix

Table 3.5 presents the outcomes of Pearson's correlation analysis and variance inflation factors (VIF) for the independent variables considered in the multivariate analyses. This table reveals significant relationships among some independent variables, with a few demonstrating moderate correlation levels. However, VIF statistics serve as a crucial tool for assessing potential multicollinearity among these variables. A commonly accepted guideline is that VIF values exceeding 10 typically indicate multicollinearity (Al-Najjar & Kilincarslan, 2018; Hosain, 2016). Additionally, the tolerance, which is calculated as the reciprocal of VIF (1/VIF), is employed to gauge the extent of multicollinearity. When the tolerance value falls below 0.1, corresponding to a VIF value of 10, it implies the presence of multicollinearity (Al-Najjar & Kilincarslan, 2018). Upon examination of the table, it is evident that none of the VIF values surpasses 10, and none of the tolerance values dips below 0.1. Consequently, this suggests that there is no substantial multicollinearity present in the dataset.

Table 3.5: Pairwise correlations

Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	**VIF**	**1/VIF**
(1) Innov	1.000									1.13	0.89
(2) gGDP	-0.295*	1.000								1.13	0.89
(3) TobinsQ	-0.003	0.145*	1.000							1.50	0.67
(4) age	-0.028*	-0.084*	0.057*	1.000						1.07	0.94
(5) cashratio	0.063*	0.039*	0.162*	-0.030*	1.000					1.24	0.81
(6) ROA	0.001	0.197*	0.482*	-0.005	0.285*	1.000				1.75	0.57
(7) Debtratio	0.022	-0.098*	-0.120*	-0.053*	-0.364*	-0.344*	1.000			1.71	0.58
(8) Size	-0.056*	0.074*	-0.011	-0.065*	0.270*	0.340*	-0.585*	1.000		1.71	0.58
(9) DivAssets	-0.172*	0.135*	0.492*	0.074*	0.281*	0.582*	-0.298*	0.255*	1.000		
Mean VIF										1.41	

The table presents pairwise correlations for the firm-specific factors, macroeconomic variables, and institutional variables. The sample consists of 260 listed non-financial firms (3900 firm-year observations) from six African countries over the period 2006-2020. All variables used are defined in Table 3.2 and winsorised at the lower and upper five percentiles. Note: * is statistically significant at 1 percent.

3.4.3 Multivariate Analysis- Innovation and Dividend Policy

The initial empirical analysis conducted aims to assess the effect of innovation on the dividend policy of African-listed firms, with the results presented in Table 3.6. In each of the models, the dependent variable utilised is the dividend payout ratio (*DPR*), as measured by *DIVASSETS*. The primary explanatory variable is Innovation (*INNOV*), represented by the logarithm of total patent applications. Additionally, the analysis incorporates several control variables, including firm size, firm age, cash ratio, debt ratio, Tobin's q, and GDP growth.

Table 3.6 reports the results obtained using different estimation approaches, namely the dynamic OLS estimation (Model 1), fixed effects estimation (Model 2), and system GMM estimation (Models 3 and 4) under varying assumptions regarding the exogeneity or endogeneity of innovation. Notably, Model 4 accounts for potential endogeneity in the relationship between innovation, as measured by patent applications, and dividend policy. This endogeneity may arise due to factors such as firms with stronger financial health simultaneously engaging in both innovation and dividend payments, creating a correlation between the two variables that does not necessarily imply causation. Examining Table 3.6 reveals that across all models, there exists a consistent negative relationship between innovation and dividends. However, it is crucial to note that OLS estimation may introduce bias, particularly as it disregards the panel data structure and tends to produce an upward-biased coefficient estimate for the lagged dependent variable, primarily in the presence of unobserved heterogeneity. In this context, the coefficient of the lagged dependent variable in OLS is notably higher (0.611) than that in fixed effects (0.462). Despite fixed effects estimation addressing some panel data aspects, it fails to consider the correlation between the lagged dependent variable and the regression error, potentially leading to a downward-biased coefficient estimate for the lagged dependent variable. To mitigate these concerns, the study opts for the GMM approach, known for its ability to control for endogeneity in the lagged dependent variable, omitted variable bias, unobserved panel heterogeneity, and measurement errors. GMM also addresses issues of heteroscedasticity and autocorrelation, which may arise due to the distinct characteristics of different countries in the sample. Therefore, the study predominantly relies on GMM estimation in Model 3 for interpretation.

Consistent with the stated hypotheses that there exists a negative relationship between innovation and dividend policy, where firms that prioritise, innovation are likely to pay fewer dividends, the results confirm that innovation (*INNOV*) has a statistically significant negative effect (α=-0.006, $p < 5$ percent) on dividend policy. The findings indicate that a one percent increase in innovation corresponds to a 0.006 decrease in dividend payout among listed companies in African countries, underscoring a tendency for these firms to allocate fewer dividends when prioritizing innovation. This strategic decision reflects a preference for reinvesting in research and development (R&D) and growth initiatives over immediate shareholder payouts. Such reinvestment is seen as essential for fuelling future growth and maintaining competitiveness, thereby influencing traditional dividend policies. These results are consistent with prior research by Boumosleh and Cline (2015), Fama and French (2001), Gugler (2003), Lee and Lee (2019), and Hasan et al., (2022), all of which also identify a negative relationship between innovation and dividend payout policy.

Several theoretical frameworks help elucidate these findings. According to the residual theory of dividends, firms prioritize investments with positive net present values (NPV), such as innovation, before distributing profits as dividends. Similarly, the pecking order theory suggests that firms prefer internal financing, like retained earnings, for projects, especially when profitable innovation opportunities arise. Moreover, firms in Africa may cut dividends to maintain adequate funding for innovation, given the challenges of accessing external capital due to limited market access and heightened instability. Weak institutional frameworks exacerbate these challenges, increasing agency costs and information asymmetry, which further incentivizes firms to prioritize internal financing and retain earnings over dividend distribution (Lemi & Asefa, 2003; Lupu & Riedl, 2013). Additionally, the inherent risks and uncertainties associated with innovation in African markets, including economic volatility, political instability, and regulatory challenges, compel firms to bolster financial reserves by retaining earnings, thereby reducing available funds for dividends (McGee et al., 1995; Vermeulen et al., 2005). Limited intellectual property protections also contribute to firms' reliance on self-financing through retained earnings rather than external capital for innovation (Kaplan, 2009). Furthermore, managers and shareholders often prioritize long-term growth and market resilience through continuous innovation, reinforcing the strategic emphasis on R&D reinvestment over immediate dividend payouts (Jensen & Meckling, 1976; Guerrero-Villegas et al., 2018).

Overall, the findings suggest that African firms face a trade-off between investing in innovation and distributing dividends. This trade-off varies across firms, with some prioritizing innovation for long-term growth and others focusing on delivering immediate shareholder returns through dividends. The negative relationship observed between innovation and dividend policy underscores the view of innovation as a long-term investment requiring substantial resources. Firms may retain earnings to fund future innovative projects and maintain flexibility, potentially anticipating higher future cash flows from successful innovations. Additionally, investors may interpret innovation as a positive signal about the company's growth prospects, thereby reducing the necessity for dividend payouts to attract investor interest. Ultimately, the negative relationship highlights the challenges and inefficiencies associated with innovation in the African context, exacerbated by weak institutional environments

Table 3.6: Innovation and Dividend Policy

VARIABLES	OLS	FE	GMM (exog)	GMM (endo)
	(1)	(2)	(3)	(4)
DPR_{t-1}	0.611***	0.462***	0.842***	0.818***
	(0.025)	(0.014)	(0.163)	(0.169)
Innov	−0.001***	−0.004**	−0.006**	−0.012**
	(0.000)	(0.002)	(0.002)	(0.005)
TobinsQ	0.007***	0.008***	0.003	0.003
	(0.001)	(0.001)	(0.003)	(0.003)
Size	0.006*	0.013***	0.001	0.001
	(0.003)	(0.005)	(0.004)	(0.004)
Cashratio	0.021***	0.023***	0.015**	0.015**
	(0.006)	(0.006)	(0.007)	(0.007)
ROA	0.099***	0.070***	0.050*	0.054**
	(0.011)	(0.007)	(0.027)	(0.027)
Debtratio	−0.007**	−0.007	−0.004	−0.004
	(0.003)	(0.005)	(0.003)	(0.003)
Age	0.002**	0.009***	0.000	0.000
	(0.001)	(0.003)	(0.001)	(0.001)
gGDP	0.000***	0.000	0.000	0.000
	(0.000)	(0.000)	(0.000)	(0.000)
Constant	−0.004	−0.002	0.041*	0.100**
	(0.006)	(0.021)	(0.021)	(0.047)
Observations	3,824	3,611	3,611	3,611
R-squared	0.693	0.400		
Number of firms		260	260	260
Number of instruments			31	34
Country Dummies		Yes	Yes	Yes
Year Dummies		Yes	Yes	Yes
AR (2)			0.507	0.500
Hansen (P value)			0.567	0.745

Notes: The effect of innovation on dividend policy. The table presents the OLS, Fixed effects, and system GMM estimation results of Eq. (3.1) that relate dividends to innovation, firm-specific, and macroeconomic control variables. All estimations include constant, country, and time-fixed effects). The dependent variable is *DPR* measured as dividends paid divided by total assets, DPR_{t-1} is the lag of *DPR* or the *DPR* at time *t-1*, *INNOV* is the innovation measured as the natural logarithm of total patent applications, *TOBIN Q* is the sum of the book value of debt and market value of equity divided by the book value of total assets, *SIZE* is net assets divided by total assets, *CASHRATIO* is cash and cash equivalents divided by assets, the *DEBTRATIO* is the sum of short-term and long-term debt as a percentage of the total assets, *ROA* is the return on assets which is profit after tax but before interest to total assets, *AGE* is the natural logarithm for the number of years since incorporation, and *gGDP* is the GDP growth. For the model coefficients, z-statistics are reported in parentheses ***, **, and * Significant at 1, 5, and 10 percent levels, respectively.

Table 3.6 reveals significant findings regarding the relationship between dividend payout and various firm factors across different models. Notably, there is a consistent positive and statistically significant connection between dividend payout and the lag of dividend payout ratio, observed in all models (1, 2, 3, and 4). This suggests that non-financial companies in Africa consider the previous year's payout ratio when determining the current year's payout ratio. Consequently, a higher payout ratio in the previous year corresponds to a higher payout ratio in the current year, supporting the notion of dividend stickiness or stability, sometimes referred to as dividend smoothing. Companies employ this strategy to avoid sending negative signals to the market and eliciting adverse reactions (Arko et al., 2014). These findings corroborate earlier research (e.g., Arko et al., 2014; Boţoc & Pirtea, 2014; Hewa et al., 2014; Naceur et al., 2011).

Moving on to the control variables, the cash ratio (*CASHRATIO*) demonstrates a positive correlation with dividend payout. This implies that financially robust firms are more likely to distribute substantial dividends to shareholders. These results align with prior research (e.g., Arko et al., 2014; Boţoc and Pirtea, 2014; Burns et al., 2015), indicating that companies with higher cash reserves tend to distribute increased dividends as part of an agency control mechanism. Conversely, firms with low cash reserves tend to have lower dividend payouts. Furthermore, a favourable cash ratio's influence on dividend policy suggests that firms with ample cash reserves are perceived as credible and capable of sustaining dividends over time. Such firms likely possess greater liquidity, enabling them to meet short-term obligations and allocate more dividends. A higher cash ratio can also inspire investor confidence in a company's financial stability, potentially leading to increased dividend payments. These findings further support the agency cost theory.

Additionally, these results indicate that firm size *(SIZE*) has a positive but statistically insignificant impact on dividend policy. These findings are consistent with existing studies (Arko et al., 2014, Kaźmierska-Jóźwiak, 2015; Ngo et al., 2018; Okoro et al., 2018; Razia et al., 2013). However, they differ from research (e.g., Al-Najjar and Hussainey, 2009; Fama and French, 2001; Holder et al., 1998) that establish a connection between larger firms and higher

dividend payments. The reason behind the reported outcomes may be that the influence of size on dividend policy varies depending on a company's specific circumstances. Alternatively, economic variables and other firm-specific factors could potentially obscure the relationship between size and dividend policy.

Moreover, the study observes that the coefficient of Tobin's Q (*TOBINSQ*) is positive, indicating that firms with substantial growth opportunities tend to offer increased dividends. However, these results lack statistical significance. This pattern aligns with prior research (e.g., Arko et al., 2014; Burns et al., 2015; Nuhu, 2014; Rizqia and Sumiati, 2013), which identifies insignificant associations between growth opportunities measured by Tobin's q and dividend policy. This suggests that companies in Africa prioritise dividend stability, potentially overshadowing the influence of growth opportunities on dividend decisions. Additionally, other firm-specific factors, such as debt ratio or cash ratio, could exert greater influence over dividend policy than growth opportunities in the African context.

Regarding the impact of profitability on dividend policy, our findings reveal that profitability (*ROA*) has a positive and statistically significant effect on the dividend payout ratio. In essence, this suggests that profitable firms tend to distribute higher dividends. These results align with prior research (e.g., Arko et al., 2014; Gul et al., 2015; Burns et al., 2015), consistently demonstrating the positive influence of ROA on dividend policy. Profitable firms can allocate a substantial portion of their earnings to shareholders, while unprofitable firms struggle to maintain high dividend payments. This observation aligns with signalling theory, where managers of profitable firms signal their future profitability by distributing generous dividends. Consequently, firms lacking profitability cannot emulate this strategy, as they are unable to sustain dividend payments over time (Burns et al., 2015). Another explanation for these results is grounded in the agency cost theory, where profitable firms typically have more resources and free cash flow, necessitating higher dividend payments to mitigate the risk of misappropriation and minimising agency conflicts. Additionally, companies with high ROA might feel confident about consistently offering higher dividends over time. Furthermore, firms with high ROA may have fewer attractive investment opportunities, which often leads to higher dividend payments to reduce agency costs related to potential misappropriation. Lastly, firms boasting high ROA may employ dividends as a signal of their financial strength to investors.

The results also indicate that the debt ratio (*DEBTRATIO*) exhibits a negative and statistically insignificant impact on dividend policy. These findings are consistent with prior

studies (e.g., Aivazian et al., 2003; Rizqia and Sumiati, 2013), which suggest that financial leverage does not affect a firm's dividend policy. This finding contradicts the agency theory that posits a negative relationship between the debt ratio and dividend payout policy (Jensen et al., 1992; Al-Najjar, 2009; Al-Shubiri, 2011). However, these results suggest that in this context, the relationship between financial leverage and dividend policy is not statistically significant.

By way of contrast, the firm's age (*AGE*) appears to have a negative and statistically insignificant impact on dividend policy. These results indicate that variations in a firm's age or growth opportunities are not significantly linked to changes in dividend policy. These findings are consistent with studies by Benavides et al., (2016) and Javakhadze et al., (2014), which similarly found no significant influence of firm age on dividend policy. This contradicts predictions from the life cycle theory, which posits that a firm's dividend policy evolves with its maturity. Furthermore, these results challenge information asymmetry theory, which suggests that younger firms, facing high information asymmetry, will need to pay higher dividends. However, the lack of significance of a firm's age concerning dividend policy may suggest that the relationship between firm age and dividend policy is subject to shifts in the business environment over time. Additionally, a firm's age may not necessarily dictate its growth trajectory. For instance, some older firms may still be in a growth stage, due to market expansion and product innovation, while some younger firms could be in a mature stage due to rapid growth and changing market conditions. Therefore, age might not be a significant determinant of a firm's dividend policy. Factors such as innovation and firm-specific variables like cash ratio, profitability, debt ratio, and prevailing market conditions could exert stronger influences on a firm's dividend policy in Africa.

The coefficient associated with the growth in GDP *(gGDP*) exhibits an insignificant positive impact on dividend policy. This suggests that changes in economic growth are not closely linked to changes in dividend policy. One plausible explanation could be that the relationship between GDP growth and dividend policy is non-linear and contingent upon the specific circumstances of a country. Our findings align with previous research (e.g., Gul et al., 2015; Yensu & Adusei, 2016), which similarly found no significant correlation between GDP per capita and dividend policy. Furthermore, it is worth considering that economic conditions may take time to influence a firm's dividend policy, and thus, the impact may not be immediately reflected in their dividend decisions. Additionally, innovation and firm-specific

factors may play a more significant role in shaping dividend policies than regional GDP per capita.

In summary, our findings confirm the hypothesis of a negative relationship between innovation, measured by patent applications, and dividend payout ratios in Africa. Even after adjusting for firm and country-specific factors and addressing endogeneity concerns, this relationship remains robust. This suggests that as firms innovate more, they tend to distribute fewer dividends to shareholders and allocate fewer resources to dividend payouts. The negative correlation between innovation and firm performance underpins this relationship, influenced by increased market risk, higher costs, employee dissatisfaction, and other challenges (McGee et al., 1995; Vermeulen et al., 2005; Guerrero-Villegas et al., 2018). Consequently, when innovation affects firm profitability and consumes cash flow, it results in reduced dividend payments. Overall, our findings highlight the trade-offs African firms face in allocating funds between innovation and dividends, driven by resource constraints and inefficiencies inherent in the region.

3.4.4 Robustness checks

3.4.4.1 Estimations using alternative measures of dividend payout, model specification, and other measures of innovation.

To assess the robustness of our findings, Table 3.7 delves into the robustness checks. In Model 1 of Table 3.7, we replicate our primary model by substituting the dependent variable with an alternative metric of dividend payout commonly utilised in the literature. Specifically, we normalise the *DPR* by *DIVSALES*, calculated as the dividend paid divided by sales. The outcomes closely mirror those previously reported in Table 4, reaffirming the negative relationship between innovation and dividend policy. This substantiates that our model remains robust and is not afflicted by model specification issues.

Furthermore, for an additional test of robustness, we estimate equations while excluding the lagged dependent variable, using *DIVASSETS* as the dependent variable, and applying both OLS and Fixed Effects models, following the methodology of Hasan et al., (2022) and Lee and Lee (2019). Model 2 of Table 5 presents the results for OLS and Fixed Effects. These empirical findings align with our baseline results, reinforcing the idea that innovation exhibits a negative association with dividend policy, suggesting that African firms grapple with a trade-off between innovation and dividend distribution. However, in the Fixed Effects model (Model 4), the relationship between innovation and dividend policy becomes negative, but statistically insignificant. This might be attributed to potential issues of

autocorrelation and endogeneity, as innovation and GDP growth could be intertwined in our model.

To ensure the robustness of our results concerning the measurement of innovation, we present Model 3 and Model 4 in Table 5. We consider two distinct measures: *INNOV2*, reflecting patents by residents, as per prior research (e.g., Canh et al., 2019; Kim et al., 2009), and *INNOV3*, denoting total patents divided by the population, to facilitate cross-country comparisons following the approach of Belloc et al., (2013). Employing the system GMM, our analysis demonstrates results akin to those previously reported in Table 3.6, reaffirming a negative correlation between innovation and dividend policy. Consequently, our empirical findings remain consistent with the baseline results, suggesting that innovative firms in Africa distribute fewer dividends, while dividend-paying firms invest less in innovation, aligning with the expectations of the residual theory, information asymmetry, and short-termism theories.

Table 3.7: Regression using an alternative measure of DPR, model specification, and other measures of innovation.

	DivSales		No Lag DPR		INNOV2		INNOV3	
	(1)		(2)		(3)		(4)	
VARIABLES	Exog	endo	OLS	FE	Exog	Endo	Exog	Endo
DPR_{t-1}	0.815***	0.807***			0.837***	0.742***	0.805***	0.809***
	(0.094)	(0.094)			(0.160)	(0.137)	(0.157)	(0.148)
Innov	-0.005	-0.014*	-0.004***	-0.001	-102.249***	-133.856*	-0.005***	0.001
	(0.003)	(0.008)	(0.001)	(0.002)	(39.250)	(69.205)	(0.002)	(0.003)
TobinsQ	0.002	0.002	0.016***	0.012***	0.003	0.005	0.003	0.003
	(0.002)	(0.002)	(0.002)	(0.001)	(0.003)	(0.003)	(0.003)	(0.003)
Size	0.006	0.006	0.017***	0.022***	0.001	0.003	0.001	0.001
	(0.008)	(0.009)	(0.006)	(0.005)	(0.004)	(0.004)	(0.004)	(0.003)
Cashratio	0.024***	0.023***	0.048***	0.026***	0.015**	0.018***	0.016**	0.015**
	(0.009)	(0.009)	(0.014)	(0.007)	(0.007)	(0.006)	(0.007)	(0.006)
ROA	0.073***	0.077***	0.189***	0.096***	0.051*	0.068***	0.058**	0.059**
	(0.020)	(0.020)	(0.015)	(0.008)	(0.027)	(0.023)	(0.027)	(0.025)
Debtratio	-0.001	-0.001	-0.011	-0.011*	-0.004	-0.006**	-0.005*	-0.005*
	(0.006)	(0.007)	(0.007)	(0.006)	(0.003)	(0.003)	(0.003)	(0.003)
Age	-0.002*	-0.002*	0.005***	0.012***	0.000	0.000	0.000	0.000
	(0.001)	(0.001)	(0.002)	(0.003)	(0.001)	(0.001)	(0.001)	(0.001)
gGDP	0.000	0.000	-0.000	-0.001***	0.000	-0.000	0.000	-0.000
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Constant	0.045	0.117	-0.003	-0.037*	0.004	0.005	0.027**	-0.010
	(0.032)	(0.071)	(0.013)	(0.022)	(0.010)	(0.011)	(0.014)	(0.023)
Observations	3,611	3,611	3,825	3,825	3,611	3,611	3,585	3,585
R-squared			0.44	0.204				
Number of firms	260	260	260	260	260	260	260	260
Number of instruments	31	34			31	34	31	34
Country Dummies	Yes	Yes		Yes	Yes	Yes	Yes	Yes
Year Dummies	Yes	Yes		Yes	Yes	Yes	Yes	Yes
AR (2)	0.845	0.850			0.506	0.460	0.513	0.510
Hansen (P value)	0.638	0.679			0.595	0.455	0.585	0.830

Notes: Regression results using alternative measures of dividend policy and lag of the dependent variable. The table presents system GMM estimation results of Eq. (3.1) that relate dividends to innovation, firm-specific, and macroeconomic control variables. All estimations include constant, country, and time-fixed effects). The dependent variable is *DPR* is measured using *DIVASSETS* which is the dividend paid divided by total assets and *DIVSALES* which is the dividend paid divided by sales, DPR_{t-1} is the lag of DPR or the DPR at time t-1, *INNOV* is the innovation measured as the natural logarithm of total patents application, *TOBIN*

Q is the sum of the book value of debt and market value of equity divided by the book value of total assets, *SIZE* is net assets divided by total assets, *CASHRATIO* is cash and cash equivalents divided by assets, the *DEBTRATIO* is the sum of short-term and long-term debt as a percentage of the total assets, *ROA* is the return on assets which is profit after tax but before interest to total assets, AGE is the natural logarithm for the number of years since incorporation, and *gGDP* is the growth in Gross Domestic Product. For the model coefficients, z-statistics are reported in parentheses ***, **, * Significant at 1, 5, and 10 percent levels, respectively. For the model coefficients, z-statistics are reported in parentheses ***, **, and * Significant at 1, 5, and 10 percent levels, respectively.

3.4.4.2 Estimations Excluding South Africa

In this section, the aim is to assess whether the outcomes derived are affected by the composition of the sample. We are particularly concerned with the substantial contribution of each country to our dataset, with South Africa notably dominating the sample with 1,980 firm-year observations, accounting for 50.77 percent of the total sample. South Africa's distinct business environment is acknowledged for its potential influence on both innovation and dividend policy, primarily owing to its relatively advanced institutional development compared to other countries. Hence, we seek to determine whether the presence of South African companies significantly influences the overall results of our analysis.

To address this concern, the study conducted an alternative model, excluding South Africa, and presented the findings in Table 3.8. The results in Table 3.8 align with those presented in Table 3.4, remaining consistent as it is possible to continue to observe a negative relationship between innovation and dividend policy. These results are reported using OLS, FE models, and system GMM estimation methods.

Table 3.8: Regression using a sample excluding South Africa

VARIABLES	FE	GMM (exog)	GMM (endo)
DPR_{t-1}	0.486***	0.691***	0.662***
	(0.020)	(0.175)	(0.140)
Innov	-0.005**	-0.005*	-0.017***
	(0.003)	(0.003)	(0.006)
TobinsQ	0.007***	0.005	0.006**
	(0.001)	(0.003)	(0.003)
Size	0.019***	0.005	0.008
	(0.007)	(0.005)	(0.005)
Cashratio	0.032***	0.028**	0.030**
	(0.009)	(0.012)	(0.012)
ROA	0.095***	0.103***	0.103***
	(0.011)	(0.039)	(0.031)
Debtratio	-0.008	-0.005	-0.004
	(0.008)	(0.004)	(0.004)
Age	-0.004	0.001	0.001
	(0.007)	(0.001)	(0.001)
gGDP	-0.000	-0.000	-0.000
	(0.000)	(0.000)	(0.000)
Constant	0.039	0.027	0.117**
	(0.030)	(0.021)	(0.049)
Observations	1,780	1,780	1,780
R-squared	0.447		
Number of firms	128	128	128
No. of instruments		30	33
Country Dummies	Yes	Yes	Yes
Year Dummies	Yes	Yes	Yes
AR (2)		0.951	0.991
Hansen (P value)		0.952	0.875

Notes: Regression results using alternative measures of dividend policy and lag of the dependent variable. The table presents system GMM estimation results of Eq. (3.1) that relate dividends to innovation, firm-specific, and macroeconomic control variables. All estimations include constant, country, and time-fixed effects). The dependent variable is *DPR* measured as dividends paid divided by total assets, DPR_{t-1} is the lag of *DPR* or the *DPR* at time *t-1*, *INNOV* is the innovation measured as the natural logarithm of total patents application, *TOBIN Q* is the sum of the book value of debt and market value of equity divided by the book value of total assets, *SIZE* is net assets divided by total assets, *CASHRATIO* is cash and cash equivalents divided by assets, the *DEBTRATIO* is the sum of short-term and long-term debt as a percentage of the total assets, *ROA* is the return on assets which is profit after tax, but before interest to total assets, *AGE* is the natural logarithm for the number of years since incorporation, and *gGDP* is the GDP growth. For the model coefficients, z-statistics are reported in parentheses ***, **, * Significant at 1, 5, and 10 percent levels, respectively. For the model coefficients, z-statistics are reported in parentheses ***, **, and * Significant at 1, 5, and 10 percent levels, respectively.

3.4.5 Multivariate analysis- innovation, dividend policy, and institutional development

This section underscores the pivotal role played by institutional factors in shaping the dynamic between innovation and dividend policy. It sets out to evaluate whether institutions act as moderators, influencing the interaction between innovation and dividend policy, and whether this relationship's strength varies across diverse institutional landscapes. In essence, it investigates whether the negative link between innovation and dividend policy becomes more pronounced in environments characterised by weak institutions. Such weaknesses may encompass inadequate investor protection, underdeveloped financial markets, insufficient, deficient governance effectiveness, limited control of corruption, and frail rule of law.

From the findings in Table 3.9 and Table 3.10, significant heterogeneity in the relationship between innovation and dividend policy is evident, contingent upon institutional development. Firms in countries with weaker institutional underpinnings—such as limited investor protection, underdeveloped financial markets, weak rule of law, low governance effectiveness, and high corruption—experience a substantial negative impact of innovation on dividend policy (Hasan et al., 2022). This aligns with previous research emphasizing the moderating role of investor protection and governance factors in this relationship (Hasan et al., 2022). The study confirms that variations in institutional development significantly influence the strength of the negative relationship between innovation and dividend policy in African firms, with weaker institutions intensifying the negative association and stronger institutions mitigating it (Hasan et al., 2022). Specifically, firms in weak institutional environments tend to substitute innovation for dividend payouts (McGee et al., 1995; Guerrero-Villegas et al., 2018). Conversely, in strong institutional environments, innovation tends to positively affect dividend policy, indicating that dividends are an outcome of successful innovation (Miller & Rock, 1985; Bhattacharya, 1979). Moreover, the results suggest that residual and pecking order theories dominate in weak institutional contexts, while reputation and simultaneous dividend policy theories hold greater sway in strong institutional settings (Myers & Majluf, 1984; Jensen, 1986). Strong institutions also foster efficiency in innovative activities, balancing investment tendencies and resulting in a positive effect of innovation on dividend policy (Lasfer, 2002). This underscores the role of institutional development in moderating the complex relationship between innovation and dividend policy

With regards to investor protection, these results confirm the hypothesis that weaker investor protection exacerbates the negative association, and stronger institutional development mitigates it. Our results confirm prior research (e.g., (Denis & Sibilkov, 2010; La Porta et al.,

2002; Hasan et al., 2022). We report a significant negative effect of innovation on dividend policy for weak investor protection and a positive, insignificant effect of innovation on dividend policy for strong investor protection The results suggest that in weak investor protection, firms face a trade-off between investing in innovation and paying dividends (La Porta et al., 2002). Additionally, the results show a substitution effect where firms substitute innovation for dividend policy in a weak investor protection environment (La Porta et al., 2002). On the other hand, in cases of strong investor protection, innovation and dividend policy may not compete for the same resources, as any shortfall can easily be met with external resources (Claessens et al., 2001). These findings align with previous research indicating that investor protection moderates the relationship between innovation and dividend policy (La Porta et al., 2002; Hasan et al., 2022). In the case of weak investor protection, there is a negative effect of innovation on dividend policy (Denis & Sibilkov, 2010), but in the case of strong investor protection, the relationship becomes positive (Claessens et al., 2001).

Another explanation for the reported results is that firms in countries with weak investor protection may rely more on internal funds, including profits distributed as dividends, to finance innovation projects (Denis & Sibilkov, 2010; Xiao, 2011). On the other hand, firms operating in strong investor protection environments may have access to a broader range of financing options, including external funding for innovation (Claessens et al., 2001). This could influence their dividend policy, making them less dependent on retained earnings from internal sources like innovation. Additionally, in weak investor protection environments, inefficiency from innovation is prevalent, and misappropriation of resources is high (La Porta et al., 2002; Xiao, 2011), leading to decreased profitability from innovation investments and exacerbating the negative relationship between innovation and dividend policy. Moreover, in environments with weak investor protection, firms may perceive retained earnings as a strategic resource, providing flexibility for future investment and signalling growth potential (Denis & Sibilkov, 2010). These findings highlight the pivotal role of investor protection in influencing corporate financial strategies. They indicate that institutional development within African firms moderates the relationship between innovation and dividend policy, where weaker investor protection intensifies the negative association and stronger investor protection mitigates it, consistent with prior research by Hasan et al., (2022).

In terms of the development of financial markets, these results show that the negative relationship between innovation and dividend policy is significant and pronounced for firms operating in less developed financial markets. However, a positive and insignificant

relationship is reported between innovation and dividend policy for firms operating in more developed financial markets. This confirms the hypothesis that weak institutional development, like underdeveloped financial markets, exacerbates the negative association, while stronger institutional development mitigates it. These results are in line with those presented by Brown et al., (2013), who argue that financial market development offers firms enough capital for innovation, leaving internal sources available for dividends, where financial market development thereby mitigates the negative relationship between innovation and dividend policy. Additionally, our results align with those of Cecchetti and Kharroubi (2012) and Arcand et al., (2015), who showed that profitability from innovation is high in environments characterised by developed financial markets, which may, in turn, mitigate the negative relationship between innovation and dividend policy.

The observed significant negative relationship on dividend policy in underdeveloped financial markets also suggests that, in environments with less developed financial markets, firms that innovate tend to decrease their dividend payouts, and may need to retain more earnings to fund future innovation or expansion projects, as external financing options might be limited. Additionally, investors in underdeveloped financial markets may place higher value on reinvested earnings and growth opportunities, rather than on immediate dividend returns. On the other hand, in highly developed financial markets, an insignificant positive effect of innovation on dividend policy implies that, on average, the relationship between innovation and dividend policy is not statistically significant. The results may suggest that in developed markets, firms may have easier access to external financing options, allowing them to fund innovation without relying on retained earnings. Our results align with those of Hsu et al., (2014), who argue that the development of equity markets and credit markets affects technological innovation differently meaning they may also affect dividend policy differently.

Overall, the results suggest that institutional development in African firms moderates the relationship between innovation and dividend policy. Weaker institutions, such as underdeveloped financial markets, exacerbate the negative association, whereas stronger institutions, characterized by more developed markets, mitigate it. In underdeveloped markets, innovation appears to be associated with a reduction in dividends, potentially reflecting the need for internal funding (growth hypothesis) and substitution of dividends with investment in innovation. In contrast, in highly developed markets, the relationship between innovation and dividends is less pronounced, indicating a more nuanced interaction and suggesting an outcome

hypothesis. The results also confirm that the development of financial markets plays a role in moderating the relationship between innovation and dividend policy.

Furthermore, these findings reveal that the adverse effect of innovation on dividend policy is significant and more pronounced for firms operating in environments characterised by a weak rule of law. This confirms the hypothesis that the strength of the negative relationship between innovation and dividend policy in African firms is significantly influenced by variations in institutional development, with a weaker rule of law exacerbating the negative association and a stronger rule of law mitigating it. This aligns with the arguments and findings presented by Alam et al., (2019) and Canh et al., (2019), who note that countries with a strong rule of law tend to exhibit higher R&D intensity and greater patent production, indicating less trade-off between innovation and dividend policy.

Overall, these results suggest that in countries with a weak rule of law, the observed significant negative effect of innovation on dividend policy suggests that in environments where legal institutions and frameworks are less robust, firms that innovate are more likely to reduce their dividend payouts as they may face higher uncertainty and risk, leading them to prioritise retaining earnings for future contingencies rather than distributing them as dividends. Weak legal protection might make it more challenging for investors to enforce their rights, influencing firms to be more cautious in their dividend distributions. On the other hand, an insignificant negative effect of innovation on dividend policy for firms in strong rule-of-law environments implies that, on average, the relationship between innovation and dividend policy is not statistically significant in countries with a more robust legal environment, as firms may feel more secure and confident in their ability to protect investor rights, allowing for a more balanced approach between innovation and dividend distribution. Investors in these countries may have greater confidence in the legal system, reducing the need for firms to signal their value through dividend payments.

Next, the findings reveal that the adverse impact of innovation is significant for firms in countries characterised by weak government effectiveness. This implies that in environments where government institutions are less effective, firms that innovate are more likely to reduce their dividend payouts as they may face higher uncertainty, corruption, or regulatory challenges, leading them to prioritise retaining earnings for future uncertainties rather than distributing them as dividends. Weak government effectiveness may result in a lack of investor confidence in the legal and regulatory framework, influencing firms to be more about balancing

resources for innovation and dividend policy. The results are in alignment with research (e.g., Alam et al., 2019; Canh et al., 2019) showing that weak government effectiveness leads to low patent production, which can affect firm profitability and in turn, adversely affect dividend policy. Also, these results suggest that there tends to be high agency costs in weak government effectiveness (Alam et al., 2019), which may increase the likelihood of inefficient investment, resulting in less free cash flow for firms, and therefore a negative impact on dividends. This confirms weak government effectiveness and exacerbates the negative relationship between innovation and dividend policy.

On the other hand, in countries with strong government effectiveness, we report an insignificant positive effect of innovation on dividend policy, implying that, on average, the relationship between innovation and dividend policy is not statistically significant in countries with more effective government institutions, as firms may feel more secure and confident in their business environment, thereby reducing the need to retain earnings for uncertain future events. Effective government institutions may provide a stable regulatory environment, giving investors' confidence and reducing the need for firms to signal their value through dividend payments.

The findings collectively indicate that institutional development within African firms moderates the relationship between innovation and dividend policy. Weaker institutions, such as weak government effectiveness, exacerbate the negative association, while stronger institutions mitigate it. In countries characterized by weaker government effectiveness, the detrimental impact of innovation on dividends is more pronounced, reflecting the heightened challenges and uncertainties faced by firms in such environments. Conversely, in countries with stronger government effectiveness, the relationship appears less pronounced, suggesting a more stable and predictable business environment.

In environments marked by low control of corruption or high corruption levels, the negative impact of innovation on dividend policy is pronounced. Firms operating in corrupt settings tend to reduce dividend payouts, prioritizing retained earnings to navigate uncertain business environments and mitigate potential corrupt practices (Alam et al., 2019; Canh et al., 2019). Corruption diminishes returns on innovation investments, erodes institutional trust, increases investment costs, and heightens uncertainty, making it difficult for firms to profit from innovation (Alam et al., 2019; Canh et al., 2019). Consequently, in highly corrupt environments, firms may experience lower profitability from innovation investments,

exacerbating the negative effect on dividend policy. Conversely, in countries with lower corruption levels, the study finds a statistically insignificant positive effect of innovation on dividend policy. This suggests that in less corrupt environments, firms face less uncertainty and benefit from a more transparent business climate, enhancing investor trust in the firm's innovation strategies and financial decisions. Investors in these countries may perceive stronger governance and ethical standards, reducing the need for firms to signal their value through retained earnings

The findings suggest that institutional development within African firms moderates the relationship between innovation and dividend policy. Weaker institutions, such as high corruption, exacerbate the negative association, while stronger institutions, characterized by less corruption, mitigate it. The impact of innovation on dividend policy varies depending on the level of corruption in the business environment. In highly corrupt countries, the negative effect of innovation on dividends is more pronounced, reflecting the challenges and uncertainties faced by firms operating in environments with widespread corruption. In less corrupt countries, the relationship is less clear, indicating a potentially more stable and transparent business environment

In Table 3.10, where innovation is treated as endogenous, the results remain consistent with those in Table 3.9.

In summary, the pronounced negative relationship between innovation and dividend policy in African firms operating within countries characterized by weak institutional development highlights the significant challenges these firms face amidst legal, governance, and financial constraints. Conversely, robust institutional development fosters a supportive environment for innovation, enabling firms to balance shareholder interests with long-term growth objectives more effectively. Weak institutional underpinnings, including inadequate investor protection, underdeveloped financial markets, weak rule of law, governance deficiencies, and corruption, contribute to this negative relationship, influencing risk assessment, investor confidence, financing accessibility, governance complexities, and legal safeguards. In response, firms in such contexts may prioritize innovation over dividend distributions. Conversely, firms in countries with strong institutional frameworks have greater flexibility to align short-term and long-term stakeholder interests, resulting in a less pronounced relationship between innovation and dividend policy. Our findings underscore how institutional development moderates this relationship, exacerbating it in weaker institutional

environments while mitigating it in stronger ones. Overall, our study underscores the critical role of institutional quality in shaping how firms navigate decisions regarding innovation and dividend payout policies.

Table 3.9: Innovation, dividend policy, and institutional development – innovation is exogenous.

	Investor protection		Financial market development		Government Effectiveness		Rule of Law		Control of Corruption	
Variables	Low	High	Low	High	Low	High	Low	High	Low	High
DPR_{t-1}	0.712***	0.760***	0.713***	0.779***	0.673***	0.724***	0.708***	0.731***	0.747***	0.543***
	(0.163)	(0.165)	(0.228)	(0.171)	(0.173)	(0.167)	(0.164)	(0.248)	(0.196)	(0.205)
Innov	-0.006**	0.081	-0.006**	0.037	-0.005*	0.018	-0.005*	-0.005	-0.006**	0.004
	(0.003)	(0.067)	(0.003)	(0.065)	(0.003)	(0.048)	(0.003)	(0.005)	(0.003)	(0.012)
TobinsQ	0.004	0.005	0.005	0.004	0.005	0.006*	0.005	0.006	0.004	0.009**
	(0.003)	(0.003)	(0.005)	(0.003)	(0.003)	(0.003)	(0.003)	(0.005)	(0.004)	(0.004)
Size	0.004	0.002	0.006	0.001	0.006	0.003	0.003	0.005	0.005	0.005
	(0.005)	(0.004)	(0.007)	(0.003)	(0.005)	(0.004)	(0.005)	(0.005)	(0.006)	(0.005)
Cashratio	0.025**	0.011*	0.026*	0.014***	0.029**	0.009	0.029**	0.003	0.025**	0.010
	(0.011)	(0.006)	(0.015)	(0.005)	(0.012)	(0.005)	(0.011)	(0.006)	(0.012)	(0.008)
ROA	0.103***	0.035	0.092**	0.046*	0.107**	0.043	0.103**	0.072	0.103**	0.053
	(0.036)	(0.024)	(0.039)	(0.027)	(0.046)	(0.024)	(0.032)	(0.042)	(0.039)	(0.023)
Debtratio	-0.005	-0.003	-0.004	-0.004	-0.005	-0.003	-0.005	-0.005	-0.003	-0.004
	(0.004)	(0.003)	(0.004)	(0.003)	(0.004)	(0.003)	(0.004)	(0.003)	(0.004)	(0.004)
Age	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.002
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.002)	(0.001)	(0.002)
gGDP	-0.000	-0.001	-0.000	0.000	-0.000	-0.002	-0.000	0.000	-0.000	0.000
	(0.000)	(0.001)	(0.000)	(0.002)	(0.000)	(0.004)	(0.000)	(0.001)	(0.000)	(0.001)
Constant	0.040*	-0.732	0.030	-0.338	0.029	-0.161	0.041*	0.037	0.033	-0.047
	(0.021)	(0.603)	(0.022)	(0.573)	(0.021)	(0.420)	(0.024)	(0.049)	(0.020)	(0.108)
Observations	1,744	1,867	1,597	2,014	1,741	1,870	1,827	1,784	1,820	1,791
Number of instruments	30	26	30	27	30	27	31	28	31	27
Country Dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year Dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
AR (2)	0.928	0.476	0.952	0.554	0.967	0.357	0.474	0.154	0.518	0.302
Hansen (P value)	0.975	0.331	0.928	0.665	0.936	0.487	0.733	0.077	0.973	0.313

Notes: The institutional environment and the effect of innovation on dividend policy using system GMM when innovation is exogenous. The dependent variable is *DPR* measured as dividends paid divided by total assets, DPR_{t-1} is the lag of *DPR* or the *DPR* at time *t-1*, *INNOV* is the innovation measured as the natural logarithm of total patents application, *TOBIN Q* is the sum of the book value of debt and market value of equity divided by the book value of total assets, *SIZE* is net assets divided by total assets, *CASHRATIO* is cash and cash equivalents divided by assets, the *DEBTRATIO* is the sum of short-term and long-term debt as a percentage of the total assets, *ROA* is the return on assets which is profit after tax but before interest to total assets, *AGE* is the natural logarithm for the number of years since incorporation, and *gGDP* is the GDP growth. A firm is classified as being under High (Low) INVESTOR *PROTECTION* if its investor protection index is above (below) the sample median. A firm is classified as being under High (Low) FINANCIAL *MARKET DEVELOPMENT* if its Financial Markets Index is above (below) the sample median. A firm is classified as being under High (Low) CONTROL *OF CORRUPTION if* its Control of Corruption Index is above (below) the sample median. A firm is classified as being under High (Low) GOVERNMENT *EFFECTIVENESS if* its Government Effectiveness Index is above (below) the sample median. A firm is classified as being under the High (Low) RULE *OF LAW* if its Rule of Law Index is above (below) the sample median. For the model coefficients, z-statistics are indicated in parentheses: ***, **, and * denote significance at the 1%, 5%, and 10% levels, respectively

Table 3.10: Innovation, Dividend Policy and Institutional Development – innovation is endogenous

	Investor protection		Financial market development		Governance effectiveness		Rule of law		Con
Variables	Low	High	Low	High	Low	High	Low	High	L
DPR_{t-1}	0.609***	0.914***	0.670***	0.758***	0.638***	0.837***	0.645***	0.695***	0.7
	(0.129)	(0.031)	(0.155)	(0.185)	(0.136)	(0.236)	(0.123)	(0.144)	(0
Innov	-0.017***	0.086	-0.011**	-0.027	-0.017***	-0.026	-0.020***	-0.009*	-0
	(0.006)	(0.067)	(0.005)	(0.021)	(0.006)	(0.019)	(0.007)	(0.005)	(0
TobinsQ	0.007**	0.002*	0.006*	0.004	0.006**	0.004	0.006**	0.006**	0
	(0.003)	(0.001)	(0.004)	(0.003)	(0.003)	(0.005)	(0.003)	(0.003)	(0
Size	0.008	-0.001	0.008	0.001	0.008*	0.001	0.005	0.005	0
	(0.005)	(0.002)	(0.005)	(0.004)	(0.005)	(0.004)	(0.005)	(0.005)	(0
Cashratio	0.024**	0.012*	0.025**	0.015**	0.028**	0.010	0.028**	0.004	0.0
	(0.011)	(0.006)	(0.012)	(0.006)	(0.011)	(0.006)	(0.011)	(0.007)	(0
ROA	0.098**	0.036	0.086*	0.048*	0.103**	0.044*	0.097**	0.074	0.0
	(0.045)	(0.024)	(0.048)	(0.028)	(0.041)	(0.025)	(0.047)	(0.045)	(0
Debtratio	-0.006	-0.003	-0.004	-0.004	-0.004	-0.003	-0.004	-0.005	-0
	(0.005)	(0.003)	(0.004)	(0.003)	(0.004)	(0.003)	(0.004)	(0.003)	(0
Age	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.002	0
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0
gGDP	0.000	-0.002	0.000	-0.001	0.000	-0.001	0.000	0.000	0
	(0.000)	(0.001)	(0.000)	(0.001)	(0.001)	(0.002)	(0.000)	(0.001)	(0
Constant	0.050**	-0.626	0.038	-0.253	0.038	-0.052	0.048	0.058	0
	(0.025)	(0.612)	(0.024)	(0.582)	(0.024)	(0.433)	(0.027)	(0.050)	(0
Observations	1,744	1,867	1,597	2,014	1,741	1,870	1,827	1,784	1,
Number of instruments	30	26	30	27	30	27	31	28	31
Country Dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year Dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
AR (2)	0.930	0.475	0.950	0.552	0.965	0.355	0.472	0.153	0
Hansen (P value)	0.973	0.329	0.926	0.663	0.934	0.485	0.731	0.075	0

Notes: The institutional environment and the effect of innovation on dividend policy using system GMM when innovation is endogenous. The dependent variable is *DPR* measured as dividends paid divided by total assets, DPR_{t-1} is the lag of *DPR* or the *DPR* at time *t-1*, *INNOV* is the innovation measured as the natural logarithm of total patents application, *TOBIN Q* is the sum of the book value of debt and market value of equity divided by the book value of total assets, *SIZE* is net assets divided by total assets, *CASHRATIO* is cash and cash equivalents divided by assets, the *DEBTRATIO* is the sum of short-term and long-term debt as a percentage of the total assets, *ROA* is the return on assets which is profit after tax but before interest to total assets, *AGE* is the natural logarithm for the number of years since incorporation, and *gGDP* is the GDP growth. A firm is classified as being under High (Low) INVESTOR *PROTECTION* if its investor protection index is above (below) the sample median. A firm is classified as being under High (Low) FINANCIAL *MARKET DEVELOPMENT* if its Financial Markets Index is above (below) the sample median. A firm is classified as being under High (Low) CONTROL *OF CORRUPTION if* its Control of Corruption Index is above (below) the sample median. A firm is classified as being under High (Low) GOVERNMENT *EFFECTIVENESS if* its Government Effectiveness Index is above (below) the sample median. A firm is classified as being under the High (Low) RULE *OF LAW* if its Rule of Law Index is above (below) the sample median. For the model coefficients, z-statistics are indicated in parentheses: ***, **, and * denote significance at the 1%, 5%, and 10% levels, respectively.

3.5 Conclusion

This study explores the relationship between innovation and dividend policy in African firms from 2006 to 2020, addressing two primary research questions. Firstly, it confirms a consistent and statistically significant negative association between innovation and dividend payouts across six African countries, consistent with earlier findings (Hasan et al., 2022; Lee and Lee, 2019). This relationship remains robust after adjusting for country and year fixed effects, alongside firm-specific and macroeconomic factors, as verified through rigorous sensitivity analyses. The observed negative correlation suggests that firms heavily invested in innovation tend to distribute fewer dividends, supporting theoretical frameworks such as the pecking order theory and residual theory of dividends, which emphasize internal financing for profitable innovation projects (Jensen & Meckling, 1976; Guerrero-Villegas et al., 2018). In the context of the African business environment, characterized by limited access to external capital and compounded by weak institutional frameworks and economic uncertainties, firms rely heavily on retained earnings for innovation financing (Lemi & Asefa, 2003; Kaplan, 2009). This strategic choice is driven by the higher costs and risks associated with external financing, further incentivizing firms to prioritize internal financing over dividend distributions (Lupu & Riedl, 2013).

Furthermore, this study investigates the contingent impact of institutional development on the relationship between innovation and dividend policy. It reveals that the negative effect of innovation on dividend policy is more pronounced and significant in countries characterized by weak institutional development, including low investor protection, underdeveloped financial markets, governmental ineffectiveness, weak rule of law, and high levels of corruption. These findings underscore that institutional development in African firms moderates this relationship, with weaker institutions exacerbating the negative association and stronger institutions mitigating it. Our results are consistent with Hasan et al. (2022), who demonstrated that innovation negatively affects dividend policy, but in the presence of strong investor protection, this relationship can become positive.

However, this study acknowledges limitations, particularly regarding the use of patents as a measure of innovation due to the unavailability of research and development data for African countries. Patents may not capture all forms of innovation, especially in industries valuing trade secrets and first-mover advantages over patent protection. Additionally, multinational corporations filing patents in multiple countries for strategic reasons may complicate attributing innovation accurately to a single country. Data on patent applications

may contain errors, inconsistencies, or differences in patent laws and examination processes between countries, affecting the accuracy of our innovation measurement. Moreover, the sample is restricted to non-financial companies, excluding financial firms and utilities. Despite these limitations, the findings underscore the pivotal role of institutions in shaping corporate financial decisions. They underscore the need for policymakers to prioritize improvements in investor protection, financial markets, the rule of law, government effectiveness, and control of corruption to cultivate a more conducive environment for both innovation and dividend distribution in the African region.

In conclusion, this study emphasizes the nuanced interplay between innovation and dividend policy in African firms. Policymakers should focus on fostering an environment conducive to long-term investment in research and development, strengthening institutional frameworks to reduce barriers to external financing, and promoting intellectual property rights protection (Hasan et al., 2022; Lee and Lee, 2019). Addressing these challenges can support African firms in navigating the trade-offs between innovation and dividend policy, thereby fostering sustainable economic growth and competitiveness across the continent.

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CHAPTER FOUR: Institutional determinants of dividend smoothing

4 Introduction

The concept of dividend smoothing stands out as a crucial yet relatively underexplored facet of dividend policy (Syed et al., 2018). Lintner (1956) laid the foundation for dividend smoothing, emphasising the significance of selecting a payout ratio once a firm has determined its earnings. Lintner's study revealed that American firms maintained target dividend payout ratios and adjusted their dividend policies using the slow adjustment speeds (SOA) factor to align with these targets. Survey evidence (e.g., Bancel et al., 2005; Brav et al., 2005) supports Lintner's (1956) findings that firms establish long-term target payout ratios and gradually adjust dividends toward these targets, a phenomenon commonly known as dividend smoothing or dividend stability. The speed of adjustment (SOA) reflects how quickly firms adjust dividends toward the target ratio; a higher adjustment speed implies less smoothness and stability in dividends (Al-Yahyaee et al., 2011). Therefore, a low SOA implies more dividend smoothing and more stable dividends. Despite ample evidence demonstrating cross-country variations in SOA, there remains a limited understanding of the factors contributing to this variation. Consequently, questions persist from Lintner's (1956) seminal work and subsequent studies, pondering why some firms adjust toward the target payout at different speeds or why some engage in dividend smoothing (Leary & Michaely, 2011).

Addressing this, Leary and Michaely (2011) propose two theories—agency theory and information asymmetry to explain dividend smoothing, arguing that firms facing agency costs and high information asymmetry tend to smooth dividends. However, empirical evidence provides contrary findings. For instance, firms with fewer agency conflicts and less need for smoothing tend to smooth dividends more. As such, the current state of ambiguity regarding the causes of dividend smoothing leaves researchers perplexed about why firms with seemingly lesser need for signalling or mitigating agency conflicts opt for smoother dividend payments (DeMarzo & Sannikov, 2008; Guttman et al., 2010; Syed et al., 2018). Despite theoretical advancements, empirical studies on cross-sectional variations in dividend smoothing behaviour remain limited and inconclusive (Lambrecht & Myers, 2012; Syed et al., 2018). Past studies focusing on dividend smoothing have predominantly concentrated on firm-level variables, overlooking the influence of institutional factors This study aims to partially unravel the dividend smoothing puzzle by investigating the institutional determinants of dividend smoothing among African-listed firms. It seeks to identify the institutional factors influencing the SOA toward the target dividend payout for these firms.

Empirical evidence on SOA presents a mixed picture. In developed markets, a decline in SOA toward the target suggests more dividend smoothing (e.g., Brav et al., 2005; Fama and Babiak, 1968; Fama and French, 2001; Leary and Michaely, 2011). Conversely, Ha et al., (2017) demonstrate a high SOA of 0.946 in developed markets, implying less dividend smoothing, with firms adjusting dividends to their target payouts more swiftly than previously documented. In emerging markets, evidence suggests that firms maintain long-term target payout ratios but exhibit high SOA rates, resulting in lower smoothing and more unstable dividend policies (e.g., Al Malkawi et al., 2014; Tran and Nguyen, 2014). Most African firms, however, display a low SOA of 0.33, indicating dividend smoothing and stable dividend policies (Arko et al., 2014). Understanding the factors influencing the variation in SOA toward the target dividend payout is crucial in this context. By examining the institutional determinants of dividend smoothing specifically in the context of African-listed firms, this study aims to provide new insights into the factors influencing dividend smoothing or causing variation in the speed of adjustment towards the target payout. This context is notably different from those in which prior studies were conducted, thus offering a fresh perspective on the underlying mechanisms of dividend smoothing in African markets.

Institutional factors and dividend smoothing

Previous research underscores the pivotal role of the institutional environment in shaping firms' financing policies (Oztekin & Flannery, 2011; Orlova & Sun, 2018). For instance, Oztekin and Flannery (2011) demonstrate a significant correlation between legal and financial traditions and the speed of firm capital structure adjustments. Similarly, Orlova and Sun (2018) find that institutional determinants, such as corporate governance, impact the amount of excess cash and the pace at which firms from different countries adjust their cash holdings. In the context of dividend policy, studies (e.g., Adaoglu et al., 2000; Andres et al., 2009; Benavides et al., 2016) reveal that the approach toward the dividend target payout is influenced by country characteristics. Additionally, research (e.g., Allen et al., 2000; Javakhadze et al., 2014; Jeong, 2013; Koussis & Makrominas, 2019) indicates that institutional factors are integral to dividend smoothing. Furthermore, the imperative to examine corporate financial decisions in conjunction with cultural, social, and legal factors has been underscored in recent studies on dividend policy. Despite extensive research on determinants of dividend smoothing, only a limited number of studies have explored the institutional aspects of this phenomenon (Nowak et al., 2020).

Among the studies examining country-level factors, the majority centre on the impact of governance factors on investor protection (e.g., Allen et al., 2000; Javakhadze et al., 2014; Jeong, 2013; Koussis & Makrominas, 2019; Nowak et al., 2020). As a result, the impact of other institutional factors on dividend smoothing or the adjustment speed toward the target dividend payout remains largely unknown. Given these gaps in the literature, Tran et al., (2022) advocate for further research to explore how macro factors influence dividend smoothing, emphasising the limited understanding of factors affecting firms' dividend smoothing.

This study aims to address the research question: what factors contribute to cross-country differences in the adjustment speed toward the target dividend payout? Therefore, the objective is to investigate whether institutional differences can explain variations in the speed of adjustment (SOA) toward the target payout. Specifically, the study aims to explore the institutional determinants of dividend smoothing among African-listed companies, considering perspectives from agency theory and information asymmetry. Institutional features will be examined based on their categorization in the law and finance literature. Our motivation for using an international sample stems from significant variations in the impact of agency conflicts and information environments across countries. Thus, this study aims to analyse how factors such as investor protection, property rights, corruption control, press freedom, financial development, rule of law, government effectiveness, legal systems, regulatory quality, political stability, and economic growth influence dividend smoothing among African firms.

Consequently, we interpret various institutional factors as influencing agency costs and the information system environment. If a country's institutional characteristics exacerbate agency conflicts, firms in that country are likely to exhibit slower adjustment speeds, resulting in smoother dividend payments. Similarly, firms facing high information asymmetry may signal information, leading to slower adjustment speeds and stable or smoother dividend payouts. Moreover, firms in weak institutional environments may seek to reassure investors about the safety of their funds, resulting in smoothed dividends and adjustments with a low speed of adjustment factor in line with La Porta's substitute model. In general, firms in countries with similar institutional arrangements are expected to confront similar agency costs and information issues, leading to comparable adjustment speeds.

The primary hypotheses of this study are as follows: Companies in countries with weak investor protection will exhibit a lower speed of adjustment (SOA) towards the target dividend, aligning with the substitute model by La Porta et al., (2000). Stronger property rights will result

in less dividend smoothing and a higher SOA, as robust property rights improve governance and reduce agency problems and corruption (Donadelli et al., 2014; Bhaumik et al., 2019; Driffield et al., 2016). High levels of press freedom will lead to less dividend smoothing or a slower SOA due to improved governance and reduced information asymmetry (Almaskati et al., 2020; Dutta and Roy, 2016; Kalenborn and Lessmann, 2013). Elevated corruption levels will lead to a lower SOA, prompting more dividend smoothing to signal secure investments and reduce agency costs (Webb et al., 2009; Williams and Kedir, 2016). Financial development will prompt firms to adjust to their target payout with a low SOA, leading to dividend smoothing due to increased capital, growth, and performance, resulting in high free cash flow and associated agency costs. Additionally, financial development will lead to improved monitoring, reducing expropriation and information asymmetry, resulting in less dividend smoothing and a higher SOA. Low country-level governance will lead to more dividend smoothing as firms use it to build investor confidence in weak governance environments, aligning with La Porta's substitute model. Companies in civil law jurisdictions will employ more dividend smoothing to mitigate agency conflicts and address information asymmetry due to weaker minority shareholder protections. Lastly, firms in less developed countries will employ more dividend smoothing to align interests, reduce agency costs, and address information asymmetry (Yensu & Adesui, 2016). This study aims to provide a comprehensive understanding of the institutional factors influencing the variation in SOA towards the target payout, thereby addressing the dividend smoothing puzzle.

Why the choice of Africa

This study explores the institutional determinants of dividend smoothing among African listed firms, focusing on factors influencing the speed of adjustment (SOA) toward the target payout. African markets present unique challenges and opportunities for investigating these determinants. Firstly, the varying maturity and underdevelopment of financial markets across African countries (Andrianaivo & Yartey, 2010) impact firms' access to external finance and their ability to maintain stable dividend policies Institutional factors such as the strength of financial institutions and markets play a crucial role in shaping dividend smoothing decisions. Additionally, weak information disclosure practices contribute to high information asymmetry between managers and investors, influencing firms' dividend policies. Investor protection in African markets is often weaker (D'Agostino, Dunne, and Pieroni, 2016), prompting firms to adopt dividend smoothing strategies to build investor confidence. Moreover, challenges related to corporate governance standards and elevated corruption levels

(Munisi, Hermes, and Randøy, 2014) further impact agency costs and firm performance, potentially affecting dividend smoothing or the speed towards the target payout. The diversity in legal and regulatory frameworks across African countries also significantly influences dividend practices, including governance standards, accounting practices, and investor protection mechanisms. Political and economic stability varies widely across the continent and are critical institutional determinants influencing firms' dividend smoothing behaviours. Despite these challenges, Africa has experienced significant economic growth in recent years (Berman & Balde, 2013; Bhorat & Naidoo, 2018), with implications for dividend smoothing. According to signalling theory, firms in high-growth environments may use dividends to signal growth potential (Jeong, 2013), potentially affecting their SOA towards the target payout.

In summary, this study aims to provide new insights into why firms engage in dividend smoothing or maintain stable dividends in African markets, where institutional contexts significantly shape these decisions. By examining these institutional factors comprehensively, the research seeks to address existing ambiguities and contribute to understanding the nuances of dividend smoothing practices in diverse economic and regulatory environments.

In the subsequent sections, section 4.1 provides a review of related studies, section 4.2 outlines the hypothesis development, and section 4.3 presents the data and research design. Empirical results are discussed in section 4.4, and section 4.5 concludes the paper.

4.1 Review of related studies

4.1.1 Lintner's model and target payout ratio

Dividend policy and its predictability is widely regarded as an important issue, as it is useful in valuation, investment, and risk analysis practices. According to Lintner (1956), one of the most important aspects of dividend policy (after the firm had determined its earnings was choosing a pay-out ratio, commonly known as the target payout ratio or TPR). Lintner's findings were that firms target the payout ratio when making dividend decisions and that they adjust their dividend gradually towards the target. From their study, a model was constructed that showed that American firms maintained a target dividend payout ratio and adjusted their dividend policy to this target using the SOA factor. The study also highlighted that managers believe that outside investors prefer firms with a stable dividend payment mechanism. Therefore, firms tend to maintain their dividend levels and even if their income is lower, they try to distribute the same amount of dividends that were paid in previous years (Tran & Nguyen, 2014). Consequently, firms do not move immediately to a new target dividend, but instead smooth changes in their dividends by moving part of the way to the target dividend each period.

Therefore, firms tend to make periodic partial adjustments toward a target payout ratio rather than dramatic changes (Javakhadze et al., 2014).

Marsh and Merton (1987) summarise Lintner's patterns of dividend policy as follows:

1) Managers believe that firms should have some long-term target payout ratio.

2) In the dividend decision, managers focus on the change in current payouts and not on the dividend level.

3) A change in dividends is usually triggered by a major unexpected and persistent change in earnings.

4) Most managers try to avoid changing the dividend if there is a high probability that this dividend change may be reversed within one year or so.

Lintner (1956) hypothesized the following relationship between dividends and earnings:

$$D^*_{i,t} = \mathrm{r}E_{i,t} \qquad \textbf{\textit{(4.1)}}$$

In addition, Lintner (1956) also predicts that a firm will only partially adjust to the target dividend level in any given year, so the change in dividend payments from year $t-1$ to year t is given by:

$$D_{i,t} - D_{i,t-1} = \alpha_i + c_i\,(D^*_{i,t} - D_{i,t-1}) + u_{i,t} \qquad \textbf{(4.2)}$$

Substituting equation 4.1 with equation 4.2 the model is equivalently expressed as

$$D_{i,t} = \alpha_i + c_i r_i E_{i,t} + (1 - c_i) D_{i,t-1} + u_{i,t} \qquad \textbf{(4.3)}$$

Where for firm i, $D^*_{i,t}$ is the desired dividend payment in period t; r_i is the target payout ratio; $E_{i,t}$ is the earnings in period t; $D_{i,t}$ is the actual dividend payments in period t; α_i is the intercept term; $1 - C_i$ is the speed of adjustment (SOA) coefficient; and $u_{i,t}$ is the error term. The constant term (α_i) is expected to have a positive sign showing that firms are reluctant to cut dividends (see Green et al., 1993). The speed of adjustment coefficient $1 - C_i$ shows the stability in dividend changes and measures the speed of adjustment at which a firm will move toward the target payout ratio r_i in response to earnings change. The SOA ranges from 0 to 1. A speed of adjustment close to 1 indicates no proportionate smoothing of dividends relative to percentage changes in earnings, whereas the very low speed of adjustment parameter values indicates that dividends move independently of earnings and hence smoothing (Jeong, 2013).

A higher value of $1 - C_i$ indicates less dividend smoothing (Al Malkawi et al.,2014). Thus, a conservative firm will have a lower adjustment rate, while a less conservative firm will have a higher adjustment rate (Al-Yahyaee et al., 2011) In short, Lintner's model suggests that firms move gradually toward a target payout ratio and do not make an immediate response to the changes in earnings (Al Malkawi et al., 2014).

4.1.2 Ratios that firms target in their dividend policy.

The survey evidence by Lintner (1956) shows that firms target the payout ratio when they are making dividend decisions and they strive to gradually move towards this target payout ratio. While there is enough evidence to support Lintner's (1956) findings, some researchers show results to the contrary by demonstrating that firms no longer target the payout ratio but have other targets in mind. For instance, in a survey of American firms, Brav et al., (2005) finds that several potential targets now exist, and the degree to which firms adhere to any of these targets is not as strict as implied in Lintner's model. They find that nearly 40% of survey respondents reveal that they target dividends per share, only 28% target dividend payout, another 27% target growth in dividends per share, 13% target dividend yield, and 6 percent of dividend-payers claim not to target dividends at all. Cash cows were also found to primarily target the growth in dividends per share, apparently because they feel pressure to return capital to investors when earnings growth is robust (a view consistent with Jensen's free cash flow hypothesis). In addition, Brav et al., (2005) also find that dividend payers that have a tendency not to target the payout ratio or growth in dividends are somewhat smaller, more indebted, and less profitable. Similarly, in a survey of European firms, Bancel et al. (2005) find that different managers target various aspects of dividend policy, and the target is not necessarily the dividend payout ratio. They reveal that 35% of the respondents target dividends per share, 23% target growth in dividends per share, and another 11% target dividend yield, and 31% of respondents refer to other criteria which are in most cases a percentage of the net income. In sum, the above finding contradicts the findings by Lintner (1956), where it is suggested that firms target the payout ratio only.

4.1.3 Theories on Dividend Smoothing

Two major theories aim to elucidate the SOA toward the target specifically focusing on dividend smoothing or the stability of dividends. These theories, namely the agency model and the asymmetric information models (see Leary and Michaely, 2011), suggest that the simultaneous presence of agency and information asymmetry effects plays a crucial role in influencing decisions related to dividend smoothing (Javakhadze et al., 2014). Nevertheless, empirical evidence indicates that agency considerations hold greater prominence in explaining dividend smoothing behaviour compared to asymmetric explanations. As a result, scholars such as Leary and Michaely (2011) and Otieno and Oloo (2013) propose that models rooted in agency-based perspectives offer the most promising avenue for the future development of understanding dividend smoothing or the rationale behind why certain firms adjust toward the target dividend payout with varying SOA or why they smooth dividends or pay stable dividends.

4.1.3.1 Agency-based models of dividend smoothing.

According to agency-based explanations, the practice of smoothing or stability of dividends (exhibiting a low SOA) emerges as a strategy to manage the agency costs associated with free cash flow. Consequently, the provision of stable and predictable dividends serves as a mechanism to alleviate conflicts between managers and shareholders (Jeong, 2013). Aligning with this perspective, Allen et al., (2000) argue that firms experiencing heightened agency conflicts are more inclined to engage in smoothing, resulting in a lower SOA toward the target dividend. In this context, an escalation in agency costs is anticipated to drive increased dividend smoothing, leading to a lower SOA to the target payout and consequently fostering a more stable dividend policy. Moreover, firms grappling with pronounced conflicts of interest are expected to exhibit higher levels of dividend smoothing and lower SOA toward the target payout. In a similar vein, Leary and Michaely (2011) offer empirical support for agency theory, demonstrating that firms entangled in agency conflicts tend to exhibit more pronounced smoothing or slower adjustments toward the target dividends. Furthermore, a high degree of stability in dividends may compel firms to seek external capital more frequently, as such payouts diminish free cash flow. This exposure prompts management to contend with the disciplining forces of financial markets, thereby reducing agency costs and mitigating the necessity for dividend smoothing (Easterbrook, 1984; Jensen, 1986; Shleifer and Vishny, 1997).

In the African context, where institutional environments vary widely, these dynamics take on particular significance. Differences in investor protection, governance standards, and economic stability across African countries likely influence how firms navigate agency conflicts and determine their dividend policies. By exploring these institutional determinants comprehensively, this study seeks to provide new insights into the factors driving dividend smoothing practices among African-listed firms, thereby contributing to a deeper understanding of dividend policy in diverse economic and regulatory contexts.

4.1.3.2 Information asymmetry models of dividend smoothing.

Under asymmetric information, dividends serve as signals conveying information about future profitability (Bhattacharya, 1979; Miller and Rock, 1985; Miller and Rock, 1985). Dividends, in this context, act as indicators of managers' private information regarding current or future cash flows. Firms encountering heightened informational asymmetry and reduced investor awareness may find it necessary to engage in more smoothing. This allows investors to better assess the firm's earnings potential and overall value (Javakhadze et al., 2014). An anticipated outcome of asymmetric models is that companies grappling with more substantial information asymmetry issues will exhibit increased dividend smoothing (Koussis & Makrominas, 2019). Consequently, firms engage in dividend smoothing to attract individual investors who, in seeking to mitigate their information disadvantage against informed investors, prefer the stability offered by smoothed dividends (Brennan and Thakor, 1990). Leary and Michaely (2011) and Tran et al., (2021) support this perspective, asserting that firms with higher degrees of information asymmetry tend to engage in more dividend smoothing. This suggests that firms facing elevated information asymmetry are likely to demonstrate a slower SOA toward their target dividends. However, some studies challenge the predictions of information asymmetry theory. For instance, Leary and Michaely (2011) present findings that information asymmetry proxies are negatively correlated with smoothing. This implies that firms with high information asymmetry may exhibit higher SOA rates, opting for less stable dividends and maintaining more volatile dividend policies. This deviation could be attributed to the belief underlying dividend signalling theory, assuming that investors prefer stable dividends, and firms are reluctant to cut dividends.

Using dividends as a signalling tool, however, has its drawbacks. Firms opting for dividends to signal their future prospects may incur transaction costs related to obtaining external financing (Bhattacharya, 1979). Another potential cost associated with signalling through dividend payments is the potential distortion of a firm's investment decisions (Miller

and Rock, 1985). Additionally, shareholders may face costs due to the unfavourable tax treatment of dividends compared to capital gains (John and Williams, 1985). Due to these dissipative costs, only high-quality firms can effectively use dividend payments to reduce asymmetric information with outsiders and communicate their future prospects (Al Malkawi et al., 2014). Consequently, firms need to maintain their dividend payments at sustainable levels, as such low-quality firms cannot mimic this behaviour without risking the inability to sustain the required dividend levels (Jeong, 2013). Despite evidence challenging the predictions of information asymmetry models, Koussis and Makrominas (2019) present findings supporting asymmetric information explanation where in EU countries, smaller and more opaque banks, tend to engage in more smoothing. This divergence highlights the nuanced relationship between information asymmetry and dividend smoothing practices across different institutional contexts.

In African markets, which vary widely in their institutional frameworks and economic development, these dynamics take on added complexity. Differences in investor protection, governance standards, and economic stability likely influence how firms navigate information asymmetry and determine their dividend policies. By examining these institutional determinants comprehensively, this study aims to provide new insights into the factors driving dividend smoothing practices among African-listed firms. It seeks to contribute to a deeper understanding of dividend policy in diverse economic and regulatory environments, offering insights that may differ from those observed in more developed or differently regulated markets.

Furthermore, the study will explore how these institutional factors interact with asymmetric information dynamics unique to African contexts, potentially uncovering novel relationships between institutional quality, information transparency, and dividend smoothing strategies. By doing so, it aims to advance the current understanding of dividend policy decision-making in emerging and developing economies, filling gaps in the existing literature and informing policymakers and practitioners alike.

4.1.4 Firm factors and speed of adjustment

Prior literature indicates that the speed of adjustment (SOA) is likely influenced by various firm-specific factors, including corporate governance (Benavides et al., 2016; Javakhadze et al., 2014; Leary & Michaely, 2011), the age and size of the firm (Jeong, 2013; Koussis and Makrominas, 2019; Leary and Michaely, 2011), and firm risk (Guttman et al., 2010). Nevertheless, dividend smoothing (characterised by a low SOA) appears to be most prevalent among financially unconstrained firms, those facing low levels of asymmetric information, and those particularly susceptible to agency conflicts (Leary & Michaely, 2011). This phenomenon is attributed to the fact that less financially constrained firms can afford to engage in dividend smoothing as a signalling device and maintain a consistent pattern of stable dividends.

4.1.4.1. Age and Size of the firm

Various firm factors, including the size and age of a firm, have been identified as influencing the SOA toward the target dividend payout and the practice of dividend smoothing. These factors are integral components of a firm's information environment (Jeong, 2013). According to the information asymmetry theory, firms characterised by high information asymmetry are prone to engage in dividend smoothing, exhibiting a low SOA toward the target payout. Consequently, the information uncertainty regarding a firm's value is inversely related to its size and age (Zhang, 2006). An older firm with a more extended history on an organised stock exchange is expected to generate more public information for general market investors (Jeong, 2013). Hence, the issue of information asymmetry is less pronounced for firms with a longer listing year (older firms), potentially eliminating the need for dividend smoothing or resulting in a higher SOA rate toward the target payout. Consequently, as size and age increase, firms tend to engage in less dividend smoothing (with a higher SOA) (Frank and Goyal, 2003; Lemmon and Zender, 2010).

Younger firms with fewer tangible assets are likely to exhibit more dividend smoothing (Leary and Michaely, 2011), suggesting that smaller and younger firms may need to engage in dividend smoothing or adjust their dividends with a low SOA to minimise information asymmetry. However, some researchers have reported findings that challenge the predictions of the information asymmetry hypothesis. For example, Javakhadze et al., (2014) show that managers of young and small firms engage in less dividend smoothing, resulting in a higher SOA toward the target payout. Similarly, Jeong (2013) finds that larger firms and lower growth firms engage in more dividend smoothing, moving to the target payout with low SOA rates.

Additionally, Leary and Michaely (2011) find that younger firms and smaller firms, with low dividend yields, exhibit less smoothing and move to the target much faster. Similarly, Syed et al., (2018) find that in low-smoothing quantiles facing lesser or no reputational concerns, the degree of dividend smoothing increases significantly with size and age. This evidence contradicts the information asymmetry explanations of dividend smoothing. However, the tendency of young and small firms not to pay a stable dividend or be unable to smooth dividends could be attributed to the fact that such firms cannot afford this costly signal (Al Malkawi et al., 2014; Jeong, 2013).

Moreover, empirical evidence from Leary and Michaely (2011) and Syed et al., (2018) indicates that the relationship between firm size, age, and dividend smoothing varies significantly across different contexts, suggesting the need for deeper exploration within unique institutional settings. In the African context, characterized by diverse institutional frameworks and economic development levels, these dynamics assume particular significance. Variations in investor protection, governance standards, and economic stability may profoundly influence how African firms manage information asymmetry through their dividend policy decisions. By comprehensively examining these institutional determinants, this study aims to contribute fresh insights into how African-listed firms navigate dividend smoothing practices amidst distinct regulatory and economic landscapes. This research seeks to fill gaps in the literature by exploring the complex interactions between institutional quality, information transparency, and dividend policy in emerging market contexts, offering practical implications for policymakers, investors, and corporate managers operating in Africa.

4.1.4.2 Sales growth

Sales growth frequently serves as a proxy for a firm's future prospects and investment opportunities, making it a key indicator of success and a gauge for future growth (Amidu and Abor, 2006). Fama and French (2001) posit that firms with higher growth rates are less inclined to distribute dividends, due to increased financing needs and reduced free cash flow. A company experiencing high sales growth may limit dividend payments to prioritise internal equity, fostering further growth (Amidu and Abor, 2006). Consequently, firms with high sales growth are less likely to engage in dividend smoothing or to offer stable dividends. Conversely, Syed et al., (2018) note that growth firms, often newer and riskier with more intangible assets and volatile cash flows, may be prone to more dividend smoothing (Leary & Michaely, 2011; Syed et al., 2018). However, prior research (Guttman et al., 2010; Jeong, 2013) suggests that riskier firms tend to smooth dividends or move toward their targets more slowly. This implies

that firms with high sales growth are likely to engage in more dividend smoothing. Additionally, high-growth firms face increased information asymmetry between managers and investors, as their value is primarily determined by growth opportunities rather than tangible assets in place (Myers, 1977). Therefore, growth firms are expected to engage in more dividend smoothing under information asymmetry (Syed et al., 2018).

Contrary to the information asymmetry perspective, the agency cost theory predicts a different relationship between sales growth and dividend smoothing. Javakhadze et al., (2014) argue that firms with limited growth opportunities may accumulate excess cash, leading to increased agency problems between managers and shareholders. This suggests that firms with high sales growth, with less excess cash, may experience fewer agency problems and, consequently, have less need for dividend smoothing. Similarly, Syed et al., (2018) note that the agency costs of cash flow in profitable firms with greater growth opportunities tend to be lower, implying less of a need for dividend smoothing in growth firms. From the agency perspective, high-growth firms should, therefore, engage in less dividend smoothing. Nowak et al., (2021) support this notion by asserting that firms with low growth opportunities tend to accumulate excessive cash, supporting more intensive smoothing behaviour. Koussis and Makrominas (2019) also provide evidence for agency-based explanations, demonstrating a higher payout ratio smoothing for banks with lower growth opportunities. Moreover, smoothing dividends can help reduce information uncertainty and alleviate investor concerns, particularly for high-growth firms operating in industries with uncertain future cash flows and less transparent information about prospects (Javakhadze et al., 2014). Thus, according to information asymmetry predictions, firms with high sales growth ought to engage in more dividend smoothing, a notion supported by Leary and Michaely (2011), who demonstrate that firms with more growth opportunities exhibit increased dividend smoothing. On the contrary, firms with high sales growth often have significant investment opportunities, prioritising retaining earnings for growth projects and overpaying out large dividends. This suggests that high-growth firms may engage in less dividend smoothing, aligning with the idea that they prefer to reinvest earnings internally to capitalise on growth opportunities. Therefore, firms with high sales growth might emphasise communicating their commitment to reinvestment rather than paying out large or smoothed dividends.

In summary, existing evidence underscores the impact of firm-specific factors like age, size, and growth opportunities on dividend smoothing practices and the Speed of Adjustment (SOA) toward target dividends. However, discrepancies between theoretical predictions and empirical findings regarding these factors suggest a need for deeper investigation. Empirical data tend to favour explanations grounded in firm agency theory, highlighting the role of agency costs and managerial incentives in shaping dividend policy decisions. The current study aims to contribute new insights by examining how institutional factors specifically investor protection, property rights, corruption control, press freedom, financial development, rule of law, government effectiveness, legal systems, regulatory quality, political stability, and economic growth affect dividend smoothing practices among African-listed firms. Contextual differences in Africa, characterized by varying levels of institutional quality and economic development, offer a unique backdrop for exploring these dynamics.

Unlike studies predominantly conducted in developed markets, where institutional frameworks are more established, African markets present a diverse range of institutional environments that may significantly influence firms' dividend policy decisions. For instance, weaker investor protection or less developed financial markets in Africa may amplify agency costs and information asymmetry, potentially leading to distinct dividend smoothing behaviours compared to their counterparts in developed economies. By investigating these institutional determinants comprehensively, this study seeks to uncover how African-listed firms navigate dividend smoothing practices amidst unique institutional challenges. It aims to bridge gaps in the literature by providing nuanced insights into the interplay between institutional quality, information transparency, and dividend policy in emerging market contexts. Ultimately, the findings could offer valuable implications for policymakers, investors, and corporate managers operating within Africa's evolving economic and regulatory landscapes.

4.1.5 Institutional factors and speed of adjustment.

Various authors have explored the relationship between institutional factors and a firm's corporate decisions. For instance, Oztekin and Flannery (2011) compare how firms adjust their capital structures across countries, examining whether institutional differences contribute to variations in estimated adjustment speeds. Their findings reveal a significant correlation between legal and financial traditions and firm adjustment speeds. The authors show that institutional features are linked to adjustment speeds, and superior institutions reduce transaction costs associated with modifying a firm's leverage. Specifically, firms from countries with robust legal institutions, a financial structure based on capital market effectiveness instead of intermediaries, and well-functioning financial systems, adjust to their targets up to 50% more rapidly. On a similar note, Orlova and Sun (2018) investigate the impact of institutional determinants, particularly corporate governance and investors' rights protection, on cash holdings deviation from target and adjustment speed. They find that institutional determinants, including corporate governance, influence the amount of excess cash (deviation from target) and the speed at which firms across different countries adjust their cash holdings.

Regarding dividend policy, previous studies confirm the influence of institutional factors on the SOA toward the target dividend payout. For example, Al-Najjar and Kilincarslan (2017) present strong evidence that regulations, reforms, and the legal environment significantly affect the dividend smoothing behaviour of firms listed on the Istanbul Stock Exchange in the post-2003 period. Similarly, Al-Malkawi et al., (2014) find that Omani firms gradually move toward the target payout ratio with a relatively low SOA, aligning with the substitute model proposed by La Porta et al., (2000). In a similar vein, Al Yahyaee et al., (2011) suggest that the institutional and economic environment plays a crucial role in determining the smoothing behaviour of firms in Oman. In the same vein, Javakhadze et al., (2014) demonstrate that stronger shareholder rights are associated with higher SOA and, consequently, less dividend smoothing. However, most studies have focused on developed markets (e.g., Leary and Michaely, 2011; Javakhadze et al., 2014) and other emerging markets (e.g., Al-Najjar & Kilincarslan, 2017; Al-Yahyaee et al., 2011; Benavides et al., 2016; Jeong, 2013). In the context of Africa, this study stands as the first of its kind to explore factors influencing the dividend smoothing and or the speed at which a firm converges to its target payout.

The agency theory and information-based theories provide explanations for the influence of institutional factors on the SOA toward the target payout. Weaknesses in the institutional environment, such as high corruption, may create more agency conflicts, necessitating firms to smooth dividends or adjust toward the target with low SOA. Similarly, institutional weaknesses may create information asymmetry, prompting firms to signal certain information, leading to more dividend smoothing and low SOA toward the target payout. Literature in law and finance provides several indicators of national institutions' strengths or weaknesses (e.g., Aivazian et al., 2003; Almaskati et al., 2020; Booth et al., 2001; Dang, 2012; Djankov et al., 2008; Doidge et al. 2007; La Porta et al., 2000; Javakhadze et al., 2014; Machokoto et al., 2021). In alignment with this literature, we consider institutional factors such as investor protection, property rights, press freedom, legal systems, financial development, economic growth, and governance factors like the rule of law, regulatory quality, political stability, government effectiveness, and corruption.

4.1.5.1 Investor protection and dividend smoothing

The strength of investor protection is considered a key institutional factor influencing dividend smoothing or the speed of adjustment (SOA) toward the target payout. Investor protection, as defined by Defond and Hung (2004), encompasses the extent of laws safeguarding investors' rights and the robustness of legal institutions facilitating law enforcement. Strong investor protection is associated with reduced agency conflicts, creating an environment that discourages opportunistic behaviour, mitigates the risk of mismanagement, and boosts shareholders' confidence, encouraging participation in capital markets (De Fond & Hung, 2004). Consequently, in alignment with the agency theory of dividend smoothing (Leary and Michaely, 2011), it is anticipated that firms operating in an environment of strong investor protection experience fewer agency problems. Consequently, the payment of stable dividends becomes less relevant, leading to reduced smoothing and a higher SOA toward the target payout. This aligns with the predictions of the substitute model proposed by La Porta et al., (2000). Additionally, Javakhadze et al., (2014) argue that effective shareholder rights attract investors, diminishing the need for smoothing (stable dividends). This implies that dividend smoothing and investor protection act as substitutes for mitigating agency conflicts. In the presence of robust investor protection, dividend smoothing may be less relevant, due to diminished agency conflicts, leading to firms adjusting toward the target payout with high SOA and minimal dividend smoothing.

Empirical evidence on the influence of investor protection on dividend smoothing yields mixed results. Some studies support the agency theory, indicating that strong investor protection correlates with fewer agency conflicts, resulting in faster SOA and reduced dividend smoothing (e.g., Al Malkawi et al., 2014; La Porta et al., 2000; Javakhadze et al., 2014). Conversely, other studies present evidence contrary to the agency theory, suggesting that in countries with strong investor protection, firms may engage in more dividend smoothing, leading to low SOA toward the target payout (e.g., Benavides et al., 2016; La Porta et al., 2000). Moreover, Javakhadze et al., (2014) explore agency-based models and asymmetric information theories globally, finding that weaker shareholder rights tend to be associated with dividend smoothing (low SOA). They demonstrate that stronger shareholder rights are linked to less dividend smoothing, and civil law countries exhibit more dividend smoothing compared to those under common law regimes. These results support the predictions of the agency theory, indicating that firms with weaker shareholder rights face more agency conflicts, necessitating stable dividends to minimize agency costs. The findings also align with the substitute model proposed by La Porta et al., (2000).

Examining firms with weak shareholder protection and poor corporate governance, Al-Malkawi et al., (2014) find that Omani firms distribute high proportions of their income to shareholders, engage in dividend smoothing, and follow stable dividend policies, resulting in low SOA rates toward target payout. These results are consistent with the substitute model by La Porta et al., (2000), where managers in weak shareholder environments use dividends to establish a reputation when raising external funds in the capital market. The findings also support the agency theory of dividend smoothing, indicating that firms facing more agency problems adopt dividend smoothing, moving toward the target with low SOA rates. Similarly, Al-Yahyaee et al., (2011) examine the stability of Oman firms' dividend policies, revealing that weak corporate governance supports stable dividends (low SOA).

Contrary to the above findings, Benavides et al., (2016) investigated dividend payout policies in six Latin American countries, showing that firms in countries with higher governance scores engage in more dividend smoothing. The authors document an indirect relationship between SOA and rule of law indices, contradicting the predictions of the agency theory of dividend smoothing. They also note that firms in countries with low rule of law are more likely to adopt erratic dividend policies than those in high rule of law countries. This suggests that dividend smoothing could result from investor protection, supporting La Porta et al., (2000) outcome model. However, these results challenge the agency theory of dividend

smoothing, which predicts a positive relationship between investor protection and SOA and a negative relationship with dividend smoothing.

In summary, the empirical literature on the influence of investor protection on dividend smoothing and dividend smoothing reveals conflicting findings. Studies such as those by Benavides et al., (2016) and La Porta et al., (2000) suggest that firms in countries with robust investor protection mechanisms tend to engage more in dividend smoothing, contradicting expectations derived from agency theory. Conversely, other research (e.g., Al Malkawi et al., 2014; Al-Yahyaee et al., 2011; Koussis & Makrominas, 2019; Javakhadze et al., 2014) indicates that firms in countries with weaker shareholder rights exhibit lower SOA rates and adopt dividend smoothing practices, aligning with agency theory predictions.

Therefore, the context in which these studies are conducted plays a crucial role in interpreting these findings. Studies in developed markets often focus on well-established legal frameworks and strong institutional environments, where investor protection is typically higher. In contrast, the current study investigates the effects of investor protection on dividend smoothing among African-listed firms, operating within diverse institutional landscapes characterized by varying levels of regulatory enforcement and investor safeguards. Unlike studies in developed economies, where robust investor protection might encourage firms to smooth dividends as a means to signal stability and attract investors, African markets often contend with weaker investor rights and less developed financial infrastructures. These conditions may heighten agency costs and information asymmetry, prompting firms to engage in dividend smoothing to mitigate these challenges.

By focusing on African-listed firms, this study aims to provide new insights into how institutional contexts shape dividend smoothing decisions. It seeks to uncover whether and how investor protection influences dividend smoothing practices within Africa's unique regulatory and economic environments. The findings are expected to offer valuable implications for policymakers, regulators, and investors seeking to understand and navigate dividend policies in emerging market contexts, thereby enriching the global discourse on corporate finance and governance.

4.1.4.2 Property rights and dividend smoothing

The existing empirical literature has established links between property rights and various financial aspects, such as financial market development (e.g., Andrianaivo & Yartey, 2010; Beck & Levine, 2005; Cherif & Dreger, 2016), foreign direct investment (FDI) (Anyanwu, 2014; Globerman & Shapiro, 2003), economic growth (e.g., Chang, 2011; Knack & Keefer, 1995; Qiang & Jian, 2020), financing policies including cash holding SOA (Orlova & Sun, 2018), peer effects on cash holdings (Machokoto et al., 2021), and financial performance (Hasan et al., 2014). However, no study has connected property rights to dividend smoothing. Nonetheless, property rights are likely to influence agency costs, thereby impacting dividend smoothing and dividend stability.

Property rights can affect dividend smoothing by reducing agent expropriation or minimizing agency problems. For instance, Bhaumik et al., (2019) note that property rights can influence ownership dispersion, determining the nature of agency problems within firms: principal-agent vs. principal-principal. Weak property rights can elevate the threat of expropriation by managers and the state, increasing agency problems and necessitating dividend smoothing thereby making firms move towards the target with low SOA. This implies a positive relationship between property rights' strength and SOA, and a negative relationship with dividend smoothing, aligning with the agency theory of dividend smoothing. In addition, Estrin and Prevezer (2011) note that a lack of secure property rights raises the fundamental threat of expropriation thereby creating the need for more dividend smoothing. In line with information asymmetry predictions, firms in environments with weak property rights may require dividend smoothing to mitigate information asymmetry (Ghoul et al., 2017). Institutional voids, such as weak legal systems and property rights, generate high transaction costs, leading to the need for dividend smoothing, and resulting in low SOA.

Property rights play a pivotal role in influencing dividend smoothing through their impact on foreign direct investment (Globerman & Shapiro, 2003) and firm performance (Hasan et al., 2014). An increase in investment and profitability can exacerbate agency problems and necessitate dividend smoothing practices. Consequently, firms operating in environments with secure property rights are likely to exhibit more stable dividend policies, higher levels of smoothing, and a lower SOA toward the target payout. Conversely, weaker property rights may stifle firm growth and reduce profitability, resulting in fewer agency problems and a higher SOA toward the target payout, potentially leading to less dividend smoothing. For example, Acemoglu et al., (2002) demonstrate that firms in settings with weak property rights are less inclined to reinvest profits, resulting in diminished free cash flow, lower

dividend payouts, reduced dividend smoothing, and a faster adjustment toward the target payout. Therefore, the level of dividend smoothing tends to increase with the security of property rights, indicating a positive relationship between property rights security and dividend smoothing, or conversely, a negative relationship with SOA toward the payout.

Property rights play a crucial role in influencing dividend smoothing and the Speed of Adjustment (SOA) by impacting various aspects of firm operations and governance. Firstly, property rights affect the cost of capital (Cherif & Dreger, 2016; Rajan & Zingales, 2003). In regions with poor legal enforcement and unclear property rights, firms face challenges in raising capital, which hinders financial market development and increases the cost of capital. Consequently, firms in such environments may resort to dividend smoothing as a substitute for weak property rights to access capital at lower costs (Desai et al., 2007). Therefore, where property rights are weak, dividend smoothing tends to be high as firms adjust their dividends with low SOA. Conversely, in countries with strong property rights, firms may not need to engage in dividend smoothing, adjusting to the target payout with high SOA.

Additionally, property rights influence corruption levels within a country. Effective property rights institutions are associated with lower corruption levels (Driffield et al., 2016), reducing agency problems and governance challenges. In environments with strong property rights protection, shareholders have greater confidence that their investments are secure from unauthorized use or expropriation by managers. This confidence mitigates agency conflicts between shareholders and managers, potentially reducing the need for dividend smoothing. Therefore, stronger property rights are correlated with less dividend smoothing and a lower SOA toward the target payout.

Furthermore, property rights protection enhances information transparency within firms. In jurisdictions where property rights are well-protected, firms tend to adhere more strictly to disclosure standards and provide accurate financial information to shareholders. This transparency reduces information asymmetry between managers and investors, enabling more informed investment decisions and diminishing the necessity for firms to use dividend smoothing as a signalling tool (La Porta et al., 2000). Consequently, in African countries with robust property rights protections, firms may exhibit lower levels of dividend smoothing and a higher SOA toward target payouts. Strong property rights also foster better corporate governance practices by enabling shareholders to enforce their rights and hold managers accountable (Djankov et al., 2008). These governance improvements reduce agency conflicts and enhance investor confidence, potentially leading to reduced dividend smoothing as firms align their dividend policies more closely with shareholder interests and expectations.

In summary, the relationship between property rights and dividend policy presents two contrasting paths. Firstly, stronger property rights often foster high dividend smoothing and a reduced Speed of Adjustment (SOA), implying a positive link between property rights' robustness and dividend smoothing, and a negative association with SOA. This tendency arises because secure property rights enhance profitability, thereby amplifying agency issues. Consequently, firms may opt for consistent dividends to signal financial stability and bolster investor confidence. Secondly, robust property rights mitigate agency problems, diminishing the imperative for firms to engage extensively in dividend smoothing. In contrast, weaker property rights environments prompt firms to employ dividend smoothing as a strategy to convey stability to investors and secure capital at lower costs. Consequently, firms in these contexts tend to smooth dividends and adjust toward the target payout with a slower SOA. Weak property rights can also exacerbate information asymmetry and amplify agency conflicts, further motivating firms to adopt dividend smoothing practices.

The current study examining the effects of property rights protection on dividend smoothing behaviour among African listed firms contributes novel insights by focusing on a region characterized by diverse institutional frameworks and varying levels of property rights security. This approach offers a nuanced understanding of how institutional contexts influence dividend policies in emerging markets, shedding light on unique challenges and strategies relevant to investors, policymakers, and corporate managers operating in Africa.

4.1.4.3 Press freedom and dividend smoothing

The existing empirical literature on the impact of press freedom on dividend smoothing or the speed of adjustment (SOA) toward the target payout ratio is limited, despite press freedom's recognition as a crucial institutional factor due to its significant role in supporting key indicators such as the rule of law, transparency, and government efficiency (Demir & Gozgor, 2019). While political freedom, including press freedom, has been noted to have a more pronounced effect on dividend policy compared to other institutional factors like economic freedom or financial market development (Ghoulet al., 2017), the specific influence of press freedom on dividend smoothing in the African context remains underexplored.

Press freedom's potential impact on dividend smoothing is multifaceted, with implications for agency costs, the information environment, corporate governance, and the cost of capital. A free press can minimize agency conflicts by enhancing governance and reducing corruption (Almaskati et al., 2020; Faruq et al., 2013), potentially leading to less dividend smoothing and a higher SOA toward the target dividends. Conversely, restricted press freedom may elevate agency costs, necessitating more dividend smoothing to address uncertainties and

risks. High press freedom may also contribute to economic growth and firm performance, generating agency problems and requiring smoothed or stable dividends (Boubakri et al., 2013; Alam & Ali Shah, 2013) to signal stability and investor confidence.

Moreover, press freedom's impact on the information environment is significant, reducing information asymmetry and potentially making dividend signalling less relevant. This could lead to less dividend smoothing and a higher SOA as firms adjust to the target payout in an environment of greater transparency. However, if press freedom and dividends act as complements in mitigating agency costs (La Porta et al., 2000), high press freedom may necessitate more dividend smoothing to address potential agency problems.

Furthermore, press freedom's influence on dividend smoothing and SOA extends to corporate governance. An active and free media sector can enhance investor protection and firm-level governance (Bebchuk & Neeman, 2010; Almaskati et al., 2020), potentially leading to less dividend smoothing and more rapid adjustments to the target payout with high press freedom. However, if press freedom and dividend smoothing are considered complements in mitigating agency conflicts, firms may still need to smooth dividends even with high press freedom. Additionally, press freedom may affect dividend smoothing and SOA by influencing the cost of capital. Lower press freedom may be associated with higher costs of external financing due to worsened information acquisition by creditors (Qi et al., 2010), potentially leading firms to resort to dividend smoothing to minimize the cost of capital and signal a good reputation.

In summary, the impact of press freedom on dividend smoothing can be viewed from two perspectives. Firstly, a higher degree of press freedom is associated with improved governance, reduced corruption, and enhanced transparency, potentially leading to lower agency costs. In this scenario, firms may engage in less dividend smoothing and exhibit a higher SOA toward their target dividends, signalling financial stability more effectively. Conversely, restricted press freedom could elevate agency costs by limiting transparency and governance effectiveness, prompting firms to implement more dividend smoothing strategies. Additionally, press freedom's role in shaping the information environment could reduce information asymmetry, making dividend signalling less crucial and potentially resulting in less dividend smoothing and a faster SOA toward target payouts.

While previous research has recognized press freedom as crucial for governance, transparency, and reducing agency costs globally, its specific implications for dividend policies in African contexts remain largely unexplored. African markets present unique challenges and opportunities influenced by diverse regulatory environments, varying levels of institutional

development, and economic conditions. Unlike studies predominantly focused on developed economies or broad global samples, this research delves into how press freedom interacts with local governance structures, transparency standards, and investor confidence within African countries. It seeks to uncover whether higher press freedom, facilitating improved governance and transparency, indeed leads to less dividend smoothing and faster adjustments toward target payouts among African firms. Moreover, the study aims to elucidate how restricted press freedom may heighten agency costs in African markets, potentially necessitating greater dividend smoothing strategies to signal stability and mitigate information asymmetry. By examining these dynamics, the research not only deepens our understanding of how media freedom influences corporate financial strategies but also offers practical insights for policymakers and investors navigating the complexities of African capital markets. Ultimately, this study contributes nuanced insights into the interplay between press freedom, governance quality, and dividend policy in African listed firms, highlighting the relevance of institutional factors in shaping corporate financial decisions in emerging market contexts. It underscores the importance of considering local institutional dynamics when analysing dividend smoothing behaviours, offering implications that can inform both academic discourse and practical decision-making in African financial markets.

4.1.4.4 Corruption and Dividend Smoothing

While no specific study has explored the impact of corruption on dividend smoothing and SOA toward the target payout, existing research indicates a negative relationship between corruption and dividend policy (Yensu and Adesui, 2016). This suggests that companies in low-corruption countries tend to pay higher dividends, while those in highly corrupt countries tend to pay lower dividends due to elevated agency problems (Donadelli et al., 2014). The higher the corruption within a country, the higher the borrowing costs and the poorer the corporate governance, intensifying agency problems, particularly in corruption-sensitive industries. Consequently, firms facing significant agency problems may opt for dividend smoothing to minimize such issues, enhance their reputation, and maintain a low cost of capital.

Moreover, in line with information asymmetry models, firms in highly corrupt countries may experience lower stock valuation (Donadelli et al., 2014). This can lead to more dividend smoothing to contribute to building and maintaining investor confidence. A stable dividend policy can serve as a signal of financial stability and management's commitment to shareholder value, helping to reassure investors and mitigate agency costs. Conversely, in highly corrupt environments, where concerns about the misuse of company funds may arise,

firms may opt for less dividend smoothing to preserve cash for contingencies and adapt to changing circumstances, considering potential legal challenges associated with corruption.

Corruption's influence on dividend smoothing is also evident in its impact on firm performance. Studies suggest that corruption can have varied effects on firm performance, but a prevailing view is that corruption negatively affects firm performance (Dang, 2012). Corruption is viewed as a form of tax, raising costs and uncertainty for business activities. In such scenarios, firms may experience higher volatility in profitability, leading to less stable dividends and reduced dividend smoothing, thereby resulting in a high SOA toward the target payout. Similarly, corruption can lead to reduced firm productivity, value, profits, and growth, resulting in lower information asymmetry. This may lead firms to signal less, necessitating less dividend smoothing and contributing to a high SOA toward the target payout. Conversely, when corruption positively correlates with firm performance, firms may experience slower adjustment to the target due to increased free cash flow, potentially leading to higher agency conflicts and, consequently, more dividend smoothing, resulting in a low SOA toward the target payout.

The effect of corruption on dividend smoothing can manifest in two contrasting ways. Firstly, in highly corrupt environments, firms may engage in more dividend smoothing to mitigate elevated agency problems, enhance reputation, and maintain lower borrowing costs. This strategy aims to signal stability and shareholder value amidst governance challenges. Conversely, corruption's negative impact on firm performance and profitability may lead to less dividend smoothing as firms preserve cash amid uncertain conditions, potentially resulting in a higher Speed of Adjustment (SOA) toward target payouts. These dynamics highlight the dual role of corruption in shaping dividend policies, depending on its impact on agency costs, firm performance, and investor confidence.

The context in which these studies were conducted varies significantly, often focusing on developed economies with established legal and regulatory frameworks. This study aims to provide new insights by examining the effects of corruption on dividend smoothing behaviour of African listed firms. Given the unique economic, legal, and institutional environments in African countries, this study will contribute to understanding how corruption influences corporate financial strategies in emerging markets, offering valuable perspectives that differ from existing literature.

4.1.4.5 Financial Development and Dividend Smoothing

Extant literature has established a connection between financial development, corporate financing policies (Demirgüç-Kunt and Maksimovic, 1996; Machokoto et al., 2021), and economic growth (Beck & Levine, 2005). However, to the author's knowledge, no study has explored the link between financial development and dividend smoothing. Nonetheless, financial development is anticipated to exert an influence on dividend smoothing, aligning with agency cost and information asymmetry models. Financial development encompasses the progress of both financial institutions and financial markets. While financial markets are predominant sources of equity financing, financial institutions largely contribute to debt financing. In various scenarios, both developed and emerging market firms secure funding for their investments through a combination of debt and equity, especially in emerging economies with underdeveloped stock markets (Demirgüç-Kunt and Levine, 1996).

Enomoto, Kimura, and Yamanouchi (2018) posit that the financial development process correlates with higher managerial discipline standards and improved transparency and quality of accounting information. The underlying rationale is that financial development tends to reduce capital costs (Bekaert and Harvey, 2003; Makina and Negash, 2005), thereby fostering increased investment and growth (Dang, 2012; Levine and Zervos, 1998). Claessens and Laeven (2003) provide evidence for this by discovering slower growth in countries with lower levels of financial development, suggesting that firms constrained by limited access to finance may underinvest. Moreover, the law and finance literature establishes that firms from more developed financial markets find it easier to attract external financing. Consequently, financial development can contribute to enhanced firm performance (Almaskati et al., 2020; Levine, 1997) by providing more capital for investment, potentially resulting in high free cash flow. However, this abundance of free cash flow may generate agency problems, compelling firms to employ dividend smoothing as a strategy to minimize agency costs.

On the other hand, firms in underdeveloped markets may want to signal stability and obtain cheap capital by engaging in dividend smoothing. Thus, dividend smoothing acts as a substitute for underdeveloped markets. Enomoto, Kimura, and Yamanouchi (2018) suggest that the financial development process correlates with higher managerial discipline standards and improved transparency and quality of accounting information. This means that firms in developed markets will have less information asymmetry and thus require less dividend smoothing. Conversely, firms in underdeveloped markets will face high information asymmetry and will require more dividend smoothing, adjusting to the target with a low SOA.

Furthermore, financial development tends to reduce capital costs (Bekaert and Harvey, 2003; Makina and Negash, 2005), thereby fostering increased investment and growth (Dang, 2012; Levine and Zervos, 1998). Claessens and Laeven (2003) provide evidence for this by discovering slower growth in countries with lower levels of financial development, suggesting that firms constrained by limited access to finance may underinvest. An increase in investment and growth will generate agency problems and thus require dividend smoothing.

Moreover, in underdeveloped markets, firms face challenges in accessing external financing due to limited investor participation and underdeveloped financial markets. Dividend policy becomes crucial for signalling the firm's ability to generate internal funds and finance growth opportunities. Additionally, the legal and regulatory environment significantly influences dividend policy decisions in African countries. Weak investor protection laws and enforcement mechanisms may encourage firms to prioritize the interests of controlling shareholders or management over minority shareholders, making dividend smoothing a means to reassure investors and mitigate concerns about the expropriation of corporate funds (Gugler et al., 2008).

The effect of financial development on dividend smoothing is twofold. Enhanced financial systems facilitate greater investment and growth by reducing capital costs and improving access to external financing (Bekaert and Harvey, 2003; Makina and Negash, 2005). This can lead to high free cash flow, which may prompt firms to employ dividend smoothing to manage agency costs (Almaskati et al., 2020). Conversely, in underdeveloped markets characterized by high information asymmetry and limited financial access, firms use dividend smoothing to signal stability and attract cheaper capital, reflecting the challenges of navigating weak regulatory frameworks (Gugler et al., 2008).

4.1.5.1. Development of financial institutions and dividend smoothing

Financial institution development is associated with improved financial access, allowing firms to access external financing for value-creating investment opportunities. This aligns with findings by Almaskati et al., (2020) and King & Levine (1993), who suggest that countries with more developed financial systems experience faster growth and profitability. However, the relationship between financial development and dividend policy is nuanced. While enhanced financial access can lead to higher firm growth, it may also generate agency costs, prompting firms to engage in greater dividend smoothing to signal stability and mitigate information asymmetry.

Conversely, the development of financial institutions may improve monitoring, particularly through increased access to bank credit. Aivazian et al., (2003) propose that bank debt reduces moral hazard and agency problems, implying that dividend stability may be less critical in bank-centric countries. However, in the African context, challenges such as weak corporate governance culture and institutional characteristics, as noted by Gwatidzo and Ojah (2014) and Abor and Fiador (2013), may limit the effectiveness of bank monitoring. Despite the development of banks, high agency costs may persist, leading to continued reliance on dividend smoothing or stable dividend policies.

Moreover, in emerging markets with insufficient transparency and weak investment protection, dividends serve as a crucial reputation mechanism (La Porta et al., 1998). Even as financial institutions develop, firms in Africa may still face significant agency problems, compelling them to engage in dividend smoothing or maintain stable dividend policies to enhance their reputation and mitigate agency conflicts. This aligns with the findings of John and Knyazeva (2008), who suggest that firms use payout policy to mitigate agency conflicts arising from poor governance.

Therefore, while the development of the financial system in Africa may increase access to debt financing, it may not necessarily alleviate agency problems. Firms may still need to engage in dividend smoothing or maintain stable dividend policies, resulting in a low SOA toward the target payout. Understanding these dynamics is crucial for policymakers, investors, and corporate managers seeking to navigate the complexities of dividend policy decision-making in African markets.

The effect of financial institution development on dividend smoothing can be twofold. On one hand, improved financial access and profitability associated with developed financial systems can increase agency costs, leading firms to engage in more dividend smoothing to signal stability. On the other hand, enhanced monitoring through bank credit in well-developed financial systems can reduce agency problems, decreasing the need for dividend smoothing. However, in African markets, weak corporate governance and institutional challenges may sustain high agency costs despite financial institutional development, necessitating continued dividend smoothing practices. The context in which my study is conducted differs from previous research, as the study examines the effects of financial institution development on the dividend smoothing behaviour of African listed firms. This study aims to provide new insights

into how the unique governance and institutional challenges in Africa influence corporate dividend policies, offering a perspective not extensively explored in other regions.

4.1.5.2 Development of financial markets and dividend smoothing

The development of financial markets may influence dividend smoothing and the speed of adjustment (SOA) toward the target payout through its impact on firm investment. For example, Dang (2012) emphasizes the substantial role of financial market development in shaping an economy's investment landscape. As the stock market develops, liquidity risks decrease, facilitating efficient capital allocation for corporate activities and growth (Levine, 1997). Heightened corporate activities may elevate agency problems, necessitating dividend smoothing. Consequently, more developed financial markets are likely to result in more stable dividends and increased dividend smoothing. Conversely, in the absence of a developed or liquid stock market, opportunities for risk diversification become limited, potentially leading to lower firm performance and less stable dividends, thereby reducing smoothing. Additionally, Demirgüç-Kunt and Maksimovic (1996) suggest that an undeveloped stock market may compel firms to structure their financing primarily around debt, limiting access to additional credit. This constraint on funds may result in underperformance, causing firms to exhibit volatile dividend policies or less smoothing, leading to high SOA. Thus, less developed financial markets may be associated with less dividend smoothing and, consequently, higher SOA toward the target payout.

Moreover, the development of financial markets can impact dividend policy by influencing the cost of capital (See, Bekaert and Harvey, 2003; Makina and Negash, 2005). For instance, Demirgüç-Kunt and Maksimovic (1996) argue that access to a well-functioning stock market could alter debt-equity ratios by substituting debt with outside equity, subsequently lowering the cost of capital. Reduced funding costs due to well-developed financial markets may enhance financial performance, potentially increasing agency costs and necessitating more dividend smoothing. However, this dynamic may not hold for emerging markets. Even if stock markets become developed and less risky than debt, firms in emerging markets may still favour debt finance, due to family ownership control. In such cases, the cost of capital may rise, resulting in lower firm profitability. Consequently, the development of financial markets in emerging markets may lead to less dividend smoothing. Conversely, in developed countries, the evolution of stock markets may prompt firms to substitute costly debt for equity finance, lowering the cost of capital (Demirgüç-Kunt and Maksimovic, 1996). The lower cost of capital may increase firm profitability, creating agency conflicts of free cash flow. The need for

smoothing dividends may arise, resulting in low SOA toward the target payout. However, the state of financial development encourages firms to adopt more stringent governance frameworks to improve access to domestic capital markets, reducing agency conflicts and minimizing the misappropriation of resources. In developed financial markets, investors value stability and predictability. Smoothing dividends can align with investor expectations, attracting income-focused investors and contributing to a stable shareholder base. Consistent dividend payments may signal financial health and effective management, potentially influencing stock prices and overall market sentiment. Firms in countries with developed financial markets may have easier access to capital through various means, including equity and debt markets. Smoothing dividends can contribute to a positive reputation among investors, facilitating capital-raising efforts. Conversely, more developed financial markets can lead to less dividend smoothing, where firms may prefer to maintain flexibility in capital allocation, allowing them to pursue strategic investments, research and development, or other growth opportunities.

The impact of financial market development on dividend smoothing and the SOA toward target payouts can vary significantly across different contexts. In developed financial markets, such as those studied by Levine (1997) and Bekaert and Harvey (2003), efficient capital allocation and reduced liquidity risks support stable dividend policies, often necessitating increased dividend smoothing to manage agency costs and meet investor expectations. Conversely, in less developed financial markets, as observed in contexts like Dang (2012) and Makina and Negash (2005), limited liquidity and risk diversification may lead to more variable dividend strategies, resulting in less dividend smoothing and a higher SOA due to capital constraints and performance volatility.

In the African context, where financial markets are still developing and face unique challenges such as limited liquidity and higher risk perceptions, the effects of financial market development on the dividend smoothing behaviour of listed firms may differ. High agency problems and information asymmetry are prevalent in these markets and could require greater dividend smoothing practices to signal stability and attract investor confidence, potentially resulting in a low SOA toward the target payout. Understanding these dynamics is crucial as they contribute new insights into how financial market development influences dividend policy in emerging economies, particularly in Africa, where institutional factors and market characteristics play pivotal roles in shaping corporate finance strategies.

4.1.4.6 Legal systems and dividend smoothing

Previous research has extensively explored the influence of legal systems on a firm's dividend policy and dividend smoothing, primarily within the contexts of developed markets and a few specific emerging economies (La Porta et al., 1998, 2000, 2002; Shleifer and Wolfenzon, 2002). However, there is a scarcity of studies that specifically examine these relationships in the context of African firms. African markets present unique institutional landscapes, characterized by diverse legal systems, governance structures, and economic conditions. Legal systems or legal origin in African countries may have different implications for dividend policy and dividend smoothing compared to those in developed markets or other emerging economies. For example, while common law regimes are generally associated with stronger investor protections, the extent and effectiveness of legal enforcement mechanisms may vary significantly across African jurisdictions.

Legal origin or legal systems play a crucial role in shaping corporate governance frameworks, which in turn affects agency costs and dividend policies. Countries with common law origins, typically characterized by stronger investor protections and more developed financial markets, tend to have lower agency costs compared to countries with civil law origins, where investor protections may be weaker and financial markets less developed. In common law countries, stronger legal protections for investors enhance their ability to monitor and discipline management, reducing agency costs and the need for firms to smooth dividends to signal commitment to shareholder interests (La Porta et al., 2000). In contrast, firms in civil law countries, where investor protections might be weaker, may resort to dividend smoothing to build trust with investors and mitigate potential agency conflicts (Shleifer and Wolfenzon, 2002). In environments with weaker legal protections, managers may have greater discretion to pursue their own interests at the expense of shareholders. To align their interests with those of shareholders and reduce agency costs, managers in these contexts might use dividend smoothing as a tool to demonstrate financial stability and reliability (Koussis and Makrominas, 2019). This can be particularly relevant in many African countries with civil law origins where legal and regulatory frameworks are still developing. Strong legal systems, as often seen in common law countries, provide effective enforcement of contracts and protection of property rights. In strong legal systems, there is less likelihood of expropriation by managers, and this lowers the necessity for dividend smoothing as a governance mechanism. Conversely, in many African countries with weaker legal systems, firms might engage in dividend smoothing to

compensate for the higher risks associated with poor enforcement of contracts and property rights (La Porta et al., 1998).

Legal origin significantly influences information availability and reliability in financial markets, directly impacting information asymmetry between managers and investors. Common law jurisdictions typically enforce stringent disclosure requirements and uphold higher standards of transparency, thereby reducing information asymmetry and mitigating the necessity for firms to smooth dividends to signal financial health (La Porta et al., 2000). In contrast, civil law countries may impose less rigorous disclosure standards, resulting in greater information asymmetry. Consequently, firms in civil law countries may engage more in dividend smoothing to mitigate these asymmetries and signal stability to investors who have limited access to reliable information.

Moreover, legal origin also affects the development of financial markets and the dissemination of information. Common law systems, prevalent in more developed markets, facilitate better information flow and lower asymmetry (Shleifer and Wolfenzon, 2002). In contrast, civil law systems, often found in less developed financial markets like many African countries, may struggle with information flow, exacerbating information asymmetry. Thus, firms in these environments may adopt dividend smoothing as a strategy to provide credible signals of their financial performance to the market (La Porta et al., 2002).

The legal and regulatory environment shaped by legal origin further influences how investors perceive and process information. In common law jurisdictions with robust legal frameworks, investors tend to have greater confidence in firms' disclosures, potentially reducing the reliance on dividend smoothing. Conversely, in African countries with evolving legal systems, firms may resort to dividend smoothing to navigate uncertainties and information gaps prevalent in their markets (Koussis and Makrominas, 2019).

Legal origin or legal systems significantly influence dividend smoothing practices in corporate governance frameworks, presenting two distinct scenarios. Firstly, common law jurisdictions, known for robust investor protections and developed financial markets, generally experience lower agency costs, reducing the imperative for dividend smoothing to signal a commitment to shareholders. In contrast, civil law countries, characterized by weaker investor protections and less developed financial markets, often resort to dividend smoothing strategies to mitigate agency conflicts and build investor confidence. Secondly, the legal environment impacts information asymmetry in financial markets: common law systems enforce stringent

disclosure standards, enhancing transparency and potentially decreasing the reliance on dividend smoothing. Conversely, civil law systems may exhibit higher information asymmetry, necessitating more dividend smoothing to convey reliable financial signals, especially relevant in the context of many African countries with evolving legal frameworks.

The current study exploring the effects of legal systems on dividend smoothing behaviour of African listed firms adds new insights by focusing on contexts where legal frameworks are still developing. Unlike studies primarily conducted in well-established legal environments, such as those in common law countries, this research highlights how firms in African markets navigate higher information asymmetry and weaker investor protections. This perspective underscores the strategic use of dividend smoothing as a tool to manage uncertainties and build credibility amidst evolving regulatory landscapes, contributing to a nuanced understanding of dividend policy decisions in emerging market contexts.

4.1.4.7 Country-level governance and dividend smoothing

In the existing literature, the interplay between country-level governance indicators and dividend smoothing has predominantly been examined in developed markets and select emerging economies, leaving a notable gap in understanding the dynamics within African firms. African markets present a distinct blend of challenges and opportunities influenced by diverse governance environments, legal systems, and economic landscapes. Governance indicators such as the rule of law, regulatory quality, governance effectiveness, and political stability, as defined by the World Bank, hold unique implications for dividend policies in African firms.

Weak institutional quality, often observed in many African countries, presents challenges like high agency costs and information asymmetry, significantly shaping dividend policy decisions (Alam et al., 2019). However, the mechanisms through which country-level governance impacts dividend smoothing and SOA in African firms may deviate from those observed in developed or other emerging economies. For instance, in environments with weak governance, dividend smoothing may serve as a strategy to instil and maintain investor confidence, mitigating agency costs and signalling financial stability (Leary and Michaely, 2011). Yet, the effectiveness of dividend smoothing as a signal may vary based on investor perceptions and the investment climate, influenced by factors such as political instability and regulatory uncertainties.

Moreover, the relationship between country-level governance and dividend policy in African firms may be further influenced by the unique investment landscape and capital market dynamics prevalent in the region. Factors like limited access to external financing, regulatory constraints, and the presence of informal institutions may interact with governance indicators to mold dividend policy decisions in African firms (Canh et al., 2019).

The rule of law, encompassing property rights protection and contract enforcement, is pivotal for mitigating agency costs. Weak rule of law heightens the risk of managerial opportunism, prompting firms to engage in dividend smoothing to signal commitment to shareholder interests (La Porta et al., 1998; Shleifer and Vishny, 1997). Conversely, a stronger rule of law reduces agency costs, lessening the need for dividend smoothing as a signalling tool.

Regulatory quality, reflecting the government's ability to formulate and enforce policies supporting private sector development, can reduce information asymmetry by enforcing stringent disclosure requirements and corporate governance standards. High regulatory quality decreases the necessity for dividend smoothing as a signal of financial stability (Djankov, McLiesh, and Shleifer, 2007).

Governance effectiveness, including the quality of public services and independence of civil services, can lower agency costs by ensuring efficient administration and reducing corruption. Effective governance fosters investor confidence, allowing firms to adopt flexible dividend policies without extensive smoothing (Kaufmann, Kraay, and Mastruzzi, 2011).

Political stability is crucial for investor confidence. In stable environments, firms may engage in less aggressive dividend smoothing practices. However, in politically unstable regions, dividend smoothing may reassure investors amidst uncertainty (Levine, 1997).

In summary, the governance landscape at the country level profoundly impacts dividend smoothing practices through the lenses of agency theory and information asymmetry. Countries with robust governance frameworks, characterized by strong rule of law, high regulatory quality, effective governance structures, and political stability, tend to experience lower agency costs and higher transparency. This environment generally reduces the imperative for firms to engage in dividend smoothing as a means to signal financial stability and commitment to shareholders. Conversely, in regions with weaker governance, such as many African countries, there is often a heightened prevalence of agency problems and information asymmetry. In these contexts, firms may find it necessary to employ dividend

smoothing more extensively. This strategy helps to manage perceptions of financial health and reliability among investors who face greater uncertainties due to weaker institutional frameworks and regulatory environments.

This study aims to contribute new insights by examining how specific dimensions of governance, including the rule of law, regulatory quality, governance effectiveness, and political stability, influence dividend policy decisions in African listed firms. By elucidating these dynamics, the research seeks to enhance understanding of how governance contexts unique to African markets shape corporate financial strategies and investor relations through dividend smoothing practices.

4.1.4.12 Economic growth and dividend smoothing

The study of economic growth's influence on dividend smoothing in African firms introduces a novel perspective to the existing literature (Berman & Balde, 2013; Bhorat & Naidoo, 2018). While previous research has explored the relationship between economic indicators and dividend policy in various contexts, including developed and emerging markets, the specific dynamics of African economies have received limited attention.

In the context of African firms, economic growth takes on unique significance due to the region's rapid development and distinct economic characteristics (Berman & Balde, 2013; Bhorat & Naidoo, 2018). The surge in economic growth observed in recent years underscores the importance of understanding how firms in Africa navigate dividend policy decisions amidst changing economic conditions. By focusing on African economies, this study can shed light on the nuances of dividend policy practices in a region characterized by both opportunities and challenges. Understanding the mechanisms through which economic growth influences dividend policy in African firms can provide valuable insights for policymakers, investors, and corporate managers seeking to foster sustainable economic development in the region.

Moreover, the interplay between economic growth, dividend smoothing, and information asymmetry in African economies presents an intriguing area for further investigation (Jeong, 2013; Yensu & Adesui, 2016). Limited information availability and underdeveloped financial markets may amplify the challenges faced by firms in African countries, influencing their dividend policy decisions in unique ways. By exploring how economic growth impacts dividend smoothing, this study can contribute to a deeper understanding of the factors shaping dividend policy in emerging market economies and inform strategies for enhancing corporate governance and investor confidence in the region.

High agency costs in low-income countries can lead firms to engage in dividend smoothing due to difficulties in monitoring and controlling managerial activities, compounded by weaker corporate governance structures. Managers may engage in more dividend smoothing to align their interests with those of shareholders, thereby reducing the risk of managerial opportunism and reckless behaviour (Leary & Michaely, 2011). Additionally, by maintaining a stable dividend payout, managers signal their commitment to shareholder value and mitigate potential conflicts of interest, particularly in environments where investors are concerned about the misuse of company resources (Jensen, 1986).

In economies with less developed financial markets and limited information availability, there is often greater information asymmetry between managers and investors. Firms may engage in dividend smoothing to signal financial stability and reduce investor uncertainty (Jeong, 2013). Regular dividend payments can serve as a positive signal to the market about a firm's future prospects and financial health. This can be particularly important in volatile or high-risk environments, helping to build investor confidence and attract long-term investment (Bhattacharya, 1979).

Firms operating in economically uncertain environments might adopt conservative dividend policies to ensure a stable income stream for shareholders. This helps to avoid the risks associated with committing to high dividends during prosperous periods that may not be sustainable during downturns (Yensu & Adesui, 2016). Investors in high-risk regions might prefer stability over high returns, prompting firms to smooth dividends as a strategy to retain and attract investment by signaling reliability and financial prudence (Allen & Michaely, 2003).

In countries experiencing high economic growth, developed financial markets provide firms with enhanced access to external financing and lower capital costs. While this can increase free cash flow, inadequate management may exacerbate agency problems. Dividend smoothing serves to alleviate these issues by ensuring stable and predictable dividend payouts (Bekaert & Harvey, 2003; Makina & Negash, 2005). Furthermore, improved financial institutions and market development are associated with greater transparency and higher accounting standards, which reduce information asymmetry and diminish the necessity for dividend smoothing. Conversely, enhanced financial institutions may prompt firms to adopt more consistent dividend policies to demonstrate financial integrity and stability (Enomoto, Kimura, & Yamanouchi, 2018).

Firms with higher growth potential may prefer to retain earnings for reinvestment rather than distributing them as dividends. However, consistent growth can lead to more predictable earnings, which might facilitate dividend smoothing as firms aim to maintain a steady payout ratio (Jeong, 2013). In rapidly growing economies, firms may face numerous investment opportunities. While this might lead to lower dividend payouts initially, sustained growth can eventually stabilize earnings, allowing for smoother dividend policies over time (Demirgüç-Kunt & Maksimovic, 1996).

The impact of economic growth on dividend smoothing presents a nuanced perspective. In regions experiencing rapid economic development, firms may benefit from enhanced access to external financing and reduced capital costs, potentially resulting in higher free cash flow. However, this growth can also amplify agency problems, necessitating dividend smoothing to maintain stability and signal financial health to stakeholders. Conversely, in environments characterized by underdeveloped financial markets and limited information availability, economic growth might exacerbate information asymmetry. This situation often compels firms to adopt dividend smoothing practices to reassure investors and manage uncertainty effectively.

The current study focusing on the effects of economic growth on dividend smoothing behaviour of African listed firms aims to provide unique insights into how economic dynamics in Africa influence corporate finance strategies. Unlike studies conducted in more developed regions, which often assume established financial systems and robust regulatory frameworks, this research considers the evolving governance structures and market conditions specific to African economies. By examining these interactions, the study seeks to offer fresh perspectives on how African firms navigate dividend policy decisions amidst diverse economic landscapes. This approach contributes to a deeper understanding of corporate finance practices in emerging markets and offers practical implications for policymakers, investors, and corporate managers operating in Africa.

4.2 Hypothesis development

This section is organised into eight distinct parts, aligning with the literature background and the primary goals of the study. The first subsection delves into the impact of investor protection on dividend smoothing (Hypothesis 1). The second subsection explores property rights and their influence on dividend smoothing (Hypothesis 2). The third subsection examines how press freedom affects dividend smoothing or the SOA toward the target payout (Hypothesis 3). The fourth sub-section investigates the influence of corruption on dividend smoothing (Hypothesis 4). The fifth and final subsection focuses on financial market

development and its effect on dividend smoothing (Hypothesis 5). The sixth section scrutinises the relationship between country-level governance and dividend smoothing (Hypothesis 6). The seventh section addresses hypotheses related to legal origin and dividend smoothing (Hypothesis 7). Finally, the eighth and concluding section examines hypotheses concerning economic growth and dividend smoothing (Hypothesis 8).

By arguing that institutional factors influence agency costs and the information environment of firms, the study hypothesises that institutional factors influence dividend smoothing and the SOA toward target dividend payout. Therefore, a change in institutional factors should affect a change in agency costs and information environment which should then influence a change in the SOA toward target payout. Therefore, both the agency and information-based theories seek to explain dividend smoothing and/or the differences in SOA across firms and countries (see, Leary and Michaely, 2011). Agency theory suggests that dividends exist as a means to mitigate perquisite consumption, empire-building, or other value-destroying activities. Hence, the payment of stable and predictable dividends occurs as a means of mitigating manager–shareholder agency conflicts. Similarly, firms that suffer from greater agency conflict tend to engage in more smoothing, and hence the lower the speed of adjustments toward the target dividends (Allen et al., 2000). Also, the more the firm has potential conflicts of interest, the higher the level of dividend smoothing and the lower the SOA toward the target payout (Tran et al., 2022). In the same vein, Oztekin and Flannery (2011) argue that firms in countries with similar institutional arrangements should confront similar adjustment costs and benefits and thus exhibit similar adjustment speeds. Therefore, we conjecture that institutional features should influence agency costs, and hence influence the SOA toward target dividends. Under asymmetric information, dividends are used as a signal to convey information about future profitability (Bhattacharya, 1979; Miller and Rock, 1985). Therefore, dividends serve as a signal of managers' private information about current or future cash flows. Accordingly, the degree of information asymmetry between an investor and the firm influences dividend smoothing. That is, firms facing greater informational asymmetry and less investor cognisance will need to smooth more (have low SOA) to allow investors to assess the firm's earnings ability and value (Javakhadze et al., 2014). Given the above arguments, the study formulates the following hypothesis.

H3: Institutional factors influence the SOA towards the target dividend payout.

Hypothesis H3 is broken down into seven sub-hypotheses (H3.1, H3.2, H3.3, H3.4, H3.5, H3.6, H3.7), which seek to examine the influence of investor protection, property rights, corruption control, press freedom, financial development, rule of law, government effectiveness, legal systems, regulatory quality, political stability, and economic growth on dividend smoothing and the SOA towards the target payout.

4.2.1 Hypothesis relating to investor protection and dividend smoothing.

Drawing on the theoretical frameworks of the agency theory and the substitute model proposed by La Porta et al., (2000), this study aims to examine the impact of investor protection on dividend policy, with a specific focus on African firms. According to the agency theory of dividend smoothing, firms use dividends to mitigate agency conflicts between management and shareholders by maintaining stable dividend payouts, which signal financial health and reduce perceived risk. La Porta et al., (2000) further elucidate this relationship through the substitute and outcome models, suggesting that in environments with weak investor protection, firms increase dividend payouts to build a favourable reputation with minority shareholders, leading to dividend smoothing and a low speed of adjustment (SOA) toward target payouts. Conversely, in environments with strong investor protection, firms face fewer agency problems and can afford less dividend smoothing and higher SOA.

Empirical evidence supports these theoretical propositions. For instance, Javakhadze et al., (2016) and Al-Malkawi et al., (2014) find that firms in countries with weak investor protection, including those with weaker shareholder rights, engage in dividend smoothing and exhibit low SOA towards their target dividends. Similarly, Al-Yahyaee et al., (2011) provide evidence from Oman that firms with weak investor protection smooth dividends to enhance their reputations and attract external funding, aligning with the substitute model. On the other hand, studies by Defond and Hung (2004) and Javakhadze et al., (2014) show that in environments with robust investor protection, firms tend to exhibit faster adjustment rates and less dividend smoothing, supporting the agency theory. The context of African firms presents a unique opportunity to explore this relationship further, as the institutional, economic, and governance landscapes in African markets differ significantly from those in developed or other emerging economies. African firms often operate in environments with varying degrees of investor protection, which can impact corporate behaviours differently. This study aims to fill the gap in the literature by investigating how investor protection affects dividend smoothing and SOA in African firms, considering the unique challenges and opportunities presented by these markets. Based on these theoretical and empirical insights, and considering the unique

context of African markets, this research hypothesizes that firms in African countries with weak investor protection will exhibit dividend smoothing behaviour, adjusting their dividends towards the target payout with a low speed of adjustment (SOA). This behaviour aligns with the agency theory of dividend smoothing and the substitute model, suggesting that firms use dividend stability as a mechanism to build reputations and mitigate agency conflicts in environments with inadequate investor protection.

Drawing on these insights, we formulate the following hypothesis:

H3.1: Firms from countries with weak investor protection exhibit dividend smoothing behaviour and adjust to the target with a low SOA, consistent with the agency theory of dividend smoothing and the substitute model.

4.2.2 Hypothesis relating to property rights and dividend smoothing

Drawing on the theoretical frameworks of the agency theory of dividend smoothing and the substitute model proposed by La Porta et al., (2000), this study examines the impact of property rights protection on dividend smoothing and speed of adjustment (SOA) towards target payouts in African firms. According to agency theory, firms use dividend policies to mitigate agency conflicts between management and shareholders. Stable dividend payouts signal financial health and reduce perceived risk, thus aligning management actions with shareholder interests. La Porta et al., (2000) suggest that in environments with weak investor protection, firms increase dividend payouts to build a favourable reputation with minority shareholders, leading to dividend smoothing and a low SOA. Conversely, strong investor protection environments experience fewer agency problems, allowing for less dividend smoothing and a higher SOA. No study has explicitly connected property rights to dividend policy SOA. Nonetheless, property rights likely influence agency costs, impacting dividend policy SOA. For instance, Bhaumik et al., (2019) argue that property rights can influence ownership dispersion, determining the nature of agency problems within firms: principal-agent vs. principal-principal conflicts. Weak property rights can elevate the threat of expropriation by managers and the state, increasing agency problems and necessitating dividend smoothing with low SOA towards the target payout. Further supporting this, Estrin and Prevezer (2011) note that weak property rights raise the threat of expropriation. In line with information asymmetry predictions, firms in environments with weak property rights may require dividend smoothing to mitigate information asymmetry (Ghoul et al., 2017). Institutional voids such as weak legal systems and property rights generate high transaction costs, leading to the need for dividend smoothing and resulting in low SOA. Additionally, strong property rights protection

fosters better corporate governance practices by providing shareholders with the legal framework to enforce their rights and hold managers accountable, reducing agency conflicts and enhancing investor confidence.

The context of African firms presents a unique opportunity to explore this relationship further, as the institutional, economic, and governance landscapes in African markets differ significantly from those in developed or other emerging economies. African firms often operate in environments with varying degrees of property rights protection, which can impact corporate behaviours differently. Based on these theoretical and empirical insights, this research hypothesizes that firms in African countries with weak property rights will exhibit dividend smoothing behaviour, adjusting their dividends towards the target payout with a low speed of adjustment (SOA). This behaviour aligns with the agency theory of dividend smoothing and the substitute model, suggesting that firms use dividend stability as a mechanism to build reputations and mitigate agency conflicts in environments with inadequate property rights protection.

H3.2: Firms operating in environments characterized by weak property rights will engage in more dividend smoothing and, therefore, adjust to the target with a low SOA.

4.2.3 Hypothesis relating to press freedom and dividend smoothing

Despite the acknowledged significance of press freedom in bolstering indicators like the rule of law and transparency (Demir & Gozgor, 2019), its specific impact on dividend smoothing and the speed of adjustment (SOA) towards the target payout remains inadequately explored within the African milieu. Press freedom's influence on dividend smoothing is multifaceted and extends to several dimensions, including agency costs, the information environment, corporate governance, and the cost of capital. Elevated press freedom may mitigate agency conflicts by fostering improved governance structures and reducing corruption (Almaskati et al., 2020; Jeong, 2013). As a consequence, the necessity for dividend smoothing may diminish in environments characterized by robust press freedom, resulting in a higher SOA. Conversely, restricted press freedom might exacerbate agency costs, necessitating greater dividend smoothing to address uncertainties and risks. Furthermore, press freedom profoundly influences the information environment by reducing information asymmetry and potentially diminishing the relevance of dividend signalling. This, in turn, could lead to reduced dividend smoothing and a higher SOA as firms adjust to the target payout in an environment of greater transparency (Kalenborn and Lessmann, 2013; Dutta and Roy, 2016). Press freedom also plays a pivotal role in shaping corporate governance practices and investor protection

mechanisms. An active and free media sector can enhance investor confidence, leading to more effective governance mechanisms and reduced agency conflicts (Bebchuk and Neeman, 2010; Almaskati et al., 2020). This, in turn, could translate into less dividend smoothing and more rapid adjustments towards the target payout with high press freedom. Additionally, press freedom may influence the cost of capital by affecting the availability and quality of information. Lower press freedom may be associated with higher costs of external financing due to worsened information acquisition by creditors (Qi et al., 2010), potentially prompting firms to resort to dividend smoothing to minimize the cost of capital and signal a positive reputation.

In the unique context of Africa, exploring the impact of press freedom on dividend smoothing and SOA is particularly valuable. African countries exhibit diverse institutional landscapes and varying levels of press freedom, which significantly influence corporate governance practices and economic outcomes. The presence of robust press freedom can enhance governance transparency, reduce agency costs, and improve the information environment, thereby potentially altering firms' dividend policies and adjustment speeds. Understanding these dynamics empirically in the African context can validate theoretical frameworks and provide insights into how press freedom shapes financial decision-making in emerging markets.

Building upon these insights, the study formulates the following hypothesis:

H3.3: Greater press freedom will result in reduced dividend smoothing, leading to a higher SOA towards the target payout.

4.2.4 Hypothesis relating to corruption and dividend smoothing

Drawing on established theories and empirical findings, this study hypothesizes that higher levels of corruption will result in increased dividend smoothing, leading to a lower speed of adjustment (SOA) towards the target payout. The "grease the wheels" hypothesis posits that corruption can facilitate business activities and economic growth by reducing bureaucratic inefficiencies (Ayaydin & Hayaloglu, 2014; De Vaal & Ebben, 2011). In the African context, corruption has been shown to positively impact firm performance, growth, and productivity (Williams & Kedir, 2016; Ayaydin & Hayaloglu, 2014), often resulting in higher free cash flow and necessitating more dividend smoothing to mitigate agency conflicts, thus lowering the SOA (Goedhuys et al., 2016; Jiang & Nie, 2014). Additionally, corruption is associated with higher borrowing costs and poorer corporate governance, which intensifies agency

problems and increases the need for dividend smoothing to maintain a low cost of capital and signal financial stability to investors (Donadelli et al., 2014). In line with agency and signalling theories, an increased firm performance due to corruption can prompt dividend smoothing, reducing the SOA toward the target payout. Furthermore, corruption's positive correlation with foreign direct investment (FDI) suggests that increased FDI can enhance firm performance and agency costs, leading to more dividend smoothing and a lower SOA (Jiang & Nie, 2014).

Conversely, in environments with high corruption, firms may use dividend smoothing as a mechanism to build investor confidence and mitigate agency costs, aligning with the substitute model proposed by La Porta et al., (2000). Corruption's impact on firm performance varies, but it is often viewed as a form of tax that raises costs and uncertainty, leading to less stable dividends and a high SOA (Dang, 2012).

In the unique context of Africa, exploring the impact of corruption on dividend smoothing and SOA is particularly relevant due to the continent's varied institutional environments and economic challenges. African countries frequently contend with governance issues and varying levels of corruption, which profoundly affect business operations and financial decisions. Understanding how corruption influences dividend policies empirically in African firms can provide insights into broader economic dynamics and validate theoretical frameworks in emerging markets.

Based on these arguments, we formulate the following testable hypothesis:

H3.4: Higher levels of corruption will result in increased dividend smoothing, leading to a lower SOA towards the target payout.

4.2.5 Hypothesis relating to financial development and dividend smoothing

In the context of Africa, exploring how financial development influences dividend smoothing and the Speed of Adjustment (SOA) toward the target payout is crucial for several reasons. African countries exhibit diverse financial landscapes characterized by varying levels of financial institutions' sophistication and market depth. These factors significantly impact firms' access to capital, investment decisions, and overall financial health. Financial development in Africa is often marked by challenges such as limited access to finance, underdeveloped capital markets, and inadequate institutional frameworks (Claessens and Laeven, 2003; Gugler et al., 2008). Understanding how these factors influence dividend policies empirically can shed light on the effectiveness of agency and signalling theories within this unique economic context.

The hypothesis posits that greater financial development will lead to increased dividend smoothing and a lower SOA towards the target payout. This assertion is grounded in the premise that advanced financial systems reduce capital costs, promote investment, and improve firm performance by facilitating efficient allocation of capital (Bekaert and Harvey, 2003; Makina and Negash, 2005). However, in less developed financial environments, firms may face constraints in accessing external finance, potentially leading to underinvestment and financial instability. The availability of free cash flow in financially developed markets can exacerbate agency problems, prompting firms to employ dividend smoothing strategies to signal financial stability and commitment to shareholders (Bekaert and Harvey, 2003; Makina and Negash, 2005).

Therefore, exploring the relationship between financial development and dividend smoothing in African countries not only contributes to the empirical validation of agency and signalling theories but also provides insights into how financial market maturity influences corporate financial policies. Based on these arguments, the hypothesis is formulated as follows:

Therefore, based on the aforementioned arguments, the hypothesis is formulated as follows:

H3.5: Greater financial development will result in increased dividend smoothing, leading to a lower SOA towards the target payout.

The above hypothesis is divided into two components: one addressing the development of financial institutions and the other focusing on the development of financial markets.

In the unique context of Africa, exploring how the development of financial institutions influences dividend smoothing and the Speed of Adjustment (SOA) toward the target payout is critical for several reasons. African countries exhibit varied stages of financial institution development, which significantly shape firms' access to external financing, investment decisions, and overall financial stability. Financial institution development is expected to enhance these aspects by facilitating efficient resource allocation and fostering economic growth (Cherif and Dreger, 2016; Rajan & Zingales, 1995). However, in the African context, where institutional characteristics often include weak corporate governance and insufficient investment protection, the implications of financial institution development on dividend policies may differ.

The hypothesis posits that as financial institutions advance in Africa, firms are more likely to engage in dividend smoothing, thereby reducing the SOA towards the target payout. This proposition is rooted in the idea that well-developed financial institutions provide greater access to external finance, enabling firms to pursue value-creating investments and improve overall performance (Almaskati et al., 2020; Cherif and Dreger, 2016). Despite the potential benefits, increased financial access can also exacerbate agency conflicts within firms, necessitating dividend smoothing to signal stability and mitigate information asymmetry among investors (Tran et al., 2021; Leary and Michaely, 2011).

Moreover, in environments where bank debt plays a crucial role in financing, as often seen in African markets, the effectiveness of financial institution development in mitigating agency costs may be constrained by weak corporate governance practices (Gwatidzo and Ojah, 2014; Abor and Fiador, 2013). Consequently, firms may continue to rely on dividend smoothing or stable dividend policies to maintain investor confidence and manage agency conflicts effectively. Furthermore, in emerging markets like Africa, where transparency and investor protection are frequently inadequate, dividends serve as a critical mechanism for firms to signal their financial health and commitment to shareholder interests (La Porta et al., 1998; John and Knyazeva, 2008). Even with the advancement of financial institutions, African firms may find it necessary to engage in dividend smoothing to bolster their reputation and address persistent agency issues.

Therefore, examining how the development of financial institutions influences dividend smoothing in African contexts not only validates theories such as agency and signalling but also provides insights into how institutional characteristics shape corporate financial policies.

Based on these considerations, the hypothesis is formulated as follows:

H5a: As financial institutions become more developed, dividend smoothing increases, resulting in a lower SOA towards the target payout.

In the context of Africa, exploring how the development of financial markets influences dividend smoothing and the Speed of Adjustment (SOA) toward target payouts is crucial for several reasons. Financial market development significantly shapes firms' strategic decisions and performance outcomes, particularly in emerging economies like those prevalent in Africa. This study hypothesizes that as financial markets in Africa advance, firms will engage in increased dividend smoothing practices, thereby lowering the SOA towards the target payout.

The theoretical foundation for this hypothesis draws from seminal research in finance and economics. Firstly, financial market development is associated with more efficient capital allocation mechanisms, enabling firms to access capital for investments and fostering corporate activities and growth (Levine, 1997; Demirgüç-Kunt & Maksimovic, 1996). As financial markets mature, firms benefit from reduced liquidity risk and improved financial access, which can lower the cost of capital and enhance overall firm performance (Bekaert and Harvey, 2003; Makina & Negash, 2005). However, alongside these benefits, the advancement of financial markets may exacerbate agency conflicts within firms. To mitigate these conflicts and signal financial stability amid reduced information asymmetry, firms in developed financial markets often adopt stable or smoothed dividend policies (Almaskati et al., 2020). Moreover, the stability associated with developed financial markets, characterized by better risk management practices and lower likelihood of extreme financial shocks, encourages firms to adopt predictable dividend payout patterns to provide investors with a steady income stream and align with investor expectations (Demirgüç-Kunt & Maksimovic, 1996).

In the unique context of emerging markets like Africa, firms may encounter challenges accessing equity financing due to factors such as family ownership control or market inefficiencies, leading to a reliance on debt financing with potentially higher debt-equity ratios and increased firm risk (Guttman et al., 2010; Jeong, 2013). In such scenarios, firms are inclined to engage in dividend smoothing practices to mitigate investor concerns about higher leverage and associated risk perceptions. Therefore, as financial markets in Africa evolve and become more developed, firms are likely to adopt more aggressive dividend smoothing practices. This is anticipated to signal stability amidst improved financial access and reduced agency conflicts, contributing to smoother and more predictable dividend payouts (Levine, 1997; Demirgüç-Kunt & Maksimovic, 1996; Bekaert and Harvey, 2003; Makina & Negash, 2005; Almaskati et al., 2020; Guttman et al., 2010; Jeong, 2013).

Based on these arguments, this study formulates the hypothesis that:

H5b: The development of financial markets results in increased dividend smoothing, leading to a lower SOA towards the target payout.

4.2.6 Hypothesis relating to country-level governance and dividend smoothing

Drawing on established theories and empirical findings, this study hypothesizes that firms operating in environments characterized by weak country-level governance will exhibit a low speed of adjustment (SOA) towards the target payout and engage in more dividend smoothing. Weak governance, including deficiencies in the rule of law, regulatory quality, political stability, and government effectiveness, tends to increase agency costs and information asymmetry (Javakhadze et al., 2014; Leary & Michaely, 2011). In such settings, firms are likely to adjust their dividends with a low SOA, leading to more pronounced dividend smoothing to mitigate agency conflicts and signal financial stability and long-term value creation. The practice of smoothing dividends helps build and maintain investor confidence, particularly in environments with poor governance, aligning with La Porta's substitute model where firms use dividend smoothing to establish a positive reputation and obtain affordable financing. Empirical studies support this perspective, showing that firms with weaker governance adjust their dividends with lower SOA, indicating a higher degree of dividend smoothing (Javakhadze et al., 2014; Leary & Michaely, 2011; Koussis & Makrominas, 2019).

Additionally, dividend smoothing acts as a signal of financial stability, alleviating investor concerns about potential financial mismanagement or expropriation of shareholder value in weak governance environments. Consistent dividend policies can enhance access to capital, making firms more attractive to investors even in regions with high borrowing costs and poor legal safeguards. African markets, characterized by diverse governance environments, present unique challenges and opportunities, making it crucial to explore how governance impacts dividend policies. Weak institutional quality in many African countries exacerbates agency costs and information asymmetry, influencing firms' dividend policy decisions. The rule of law, regulatory quality, governance effectiveness, and political stability each play significant roles in shaping dividend policies, with weak governance factors increasing the need for dividend smoothing to mitigate agency conflicts and signal stability. Conversely, strong governance reduces these needs by lowering agency costs and improving transparency.

Based on the above arguments, we formulate the following hypothesis:

H6: Firms operating in environments characterized by weak country-level governance will exhibit a low SOA towards the target payout and engage in more dividend smoothing.

4.2.7 Hypothesis relating to legal systems and dividend smoothing

Building upon existing literature and theoretical frameworks, the hypothesis posits that firms operating in civil law countries are predisposed to engage in more dividend smoothing practices, consequently leading to a lower speed of adjustment (SOA) towards the target payout, under agency theory. Civil law jurisdictions, characterized by weaker protections for minority shareholders, often compel firms to utilize dividend smoothing as a strategic tool to enhance investor confidence and mitigate inherent agency conflicts (Koussis & Makrominas, 2019). This approach, rooted in La Porta et al., (2000) substitute model, particularly manifests in environments where legal safeguards are limited, compelling firms to adopt a more conservative dividend policy to signal stability and reliability to investors (Nowak et al., 2021). Empirical evidence further supports this notion, indicating a higher prevalence of dividend smoothing in civil law countries, resulting in a discernibly lower SOA (Koussis & Makrominas, 2019; Javakhadze et al., 2014).

However, while extensive research has delved into the impact of legal origins on dividend policies in developed markets, the dearth of studies focusing on African contexts underscores the need for further exploration. African civil law countries encounter unique challenges such as underdeveloped legal frameworks and inadequate investor protections, necessitating a nuanced understanding of how these factors influence dividend policy decisions. Weak legal structures exacerbate agency problems and information asymmetry, compelling firms to resort to dividend smoothing as a means of signalling financial stability and offsetting governance deficiencies (Shleifer & Wolfenzon, 2002). Conversely, common law jurisdictions, characterized by robust investor protections and transparency standards, typically require less dividend smoothing.

Therefore, comprehending these dynamics is paramount for stakeholders navigating dividend policy decisions in African economies, contributing to filling the existing gap in the literature and advancing the understanding of governance-dividend policy interactions within the region.

Building on the arguments, we formulate the hypothesis that:

H7: Firms operating in civil law countries will engage in more dividend smoothing, leading to a low SOA towards the target payout under the agency theory

4.2.8 Hypothesis relating to economic growth and dividend policy SOA.

In developing the hypothesis regarding dividend smoothing in firms operating in low-income countries, particularly within the African context, it is essential to consider the unique economic and institutional challenges that characterize the region. Africa encompasses a diverse array of economies, many of which are classified as low-income and face significant barriers to economic development. These countries often experience limited access to external financing, underdeveloped financial markets, and heightened economic volatility, which create a distinct environment for corporate financial decision-making. In such settings, firms may encounter elevated agency costs and uncertainty, driving them to adopt dividend smoothing practices as a strategy to signal stability and financial health in the face of economic challenges (Leary & Michaely, 2011; Yensu & Adesui, 2016).

Governance and institutional quality also play a crucial role in shaping corporate behaviours in African countries. Weak governance frameworks, characterized by deficiencies in the rule of law, regulatory quality, and political stability, exacerbate agency problems within firms. In response, companies may find it necessary to engage in dividend smoothing to mitigate risks associated with managerial opportunism and to bolster investor confidence (Javakhadze et al., 2014; La Porta et al., 1998). The exploration of dividend policies within this context can thus help validate how variations in governance quality influence corporate financial strategies in Africa.

Information asymmetry is another significant challenge in African markets due to limited transparency and disclosure standards. Firms in such environments may resort to dividend smoothing as a signalling mechanism to provide investors with a predictable income stream and to reduce uncertainty about future earnings (Bhattacharya, 1979; Jeong, 2013). This practice is particularly pertinent in markets where reliable financial information is scarce, impacting the dividend policy decisions of firms operating under these conditions.

Despite some African countries experiencing economic growth and financial market development, persistent challenges such as high borrowing costs and inadequate investor protections continue to influence corporate financial strategies. In response to these conditions, firms may adopt more conservative payout strategies to manage financial risks and maintain access to capital (Demirgüç-Kunt & Maksimovic, 1996; Allen & Michaely, 2003). Furthermore, the empirical study of dividend smoothing practices in Africa addresses a significant gap in the corporate finance literature, providing insights into the interplay between

economic, institutional, and governance factors in shaping corporate behaviours in underrepresented regions.

Therefore, based on these considerations, we hypothesize that firms operating in low-income countries in Africa will engage in more dividend smoothing, leading to a lower SOA towards the target payout. This hypothesis underscores the importance of examining African contexts to validate broader corporate finance theories and contributes to a deeper understanding of how economic conditions, governance quality and institutional factors influence dividend policy decisions in emerging and developing economies. By focusing on Africa, this study aims to enrich the empirical evidence available in the field and enhance our comprehension of dividend smoothing practices in diverse economic environments.

Based on these arguments, we posit the hypothesis that:

H7: Firms operating in low-income countries will engage in more dividend smoothing, leading to a low SOA towards the target payout.

4.3 Data and research design

4.3.1. Data and sampling

Data on firm-specific variables were sourced from the Bloomberg financial database, focusing on non-financial firms listed on African stock exchanges. The computation of dependent variables and firm-specific independent variables involved extracting information from the income statement, balance sheet, and cash flow statement items of the sampled firms. The dataset inclusively spans the years 2006 to 2020, as a timeframe selected due to the availability of data on country-level variables. Country-level data were obtained from the World Bank's Governance Indicators database and the annual freedom of press report.

To address missing data in country-level governance indicators, we adopted cubic spline interpolation following the methodology outlined by Benavides et al., (2016) and Voutsinas et al., (2018). This technique involves averaging neighbouring years and dividing the sum by two. Detailed variable definitions and data origins are provided in Table 2.2.

Our dataset comprises 202 non-financial listed firms across seven African stock markets during the period from 2006 to 2020. Refer to Table 4.1 for a summary of the sample distribution. This study focuses exclusively on non-financial firms, excluding financial companies and utilities in line with existing literature (e.g., Adaoglu, 2000; De Cesari and Ozkan, 2015; Ha et al., 2017). To ensure robustness, the study stipulates that each firm must have at least four consecutive years of observations, with no gaps in the middle of the sample

period, consistent with prior research (Andres et al., 2015). Consequently, the panel is unbalanced, given variations in the number of observations for each company and country.

Table 4.1 Sample distribution

Country	Number of firms	% of Sample
Egypt	43	21,29
Ghana	6	2,97
Kenya	14	6,93
Mauritius	11	5,45
Morocco	17	8,42
Nigeria	31	15,35
South Africa	80	39,60
7 stock Markets	**202**	**100**

4.3.2 Measurement of variables

4.3.2.1 Measurement of the dependent variable

In contrast to conventional approaches, this study standardises dividends by total assets (*DIVASSETS*) to ensure cross-sectional comparability, aligning with previous research (e.g., Benavides et al., 2016; Ha et al., 2017; Nowak et al., 2021). Scaling dividends by total assets is employed widely in various studies and addresses concerns related to pricing and earnings volatility (Boţoc & Pirtea, 2014). Scaling by total assets adjusts for differences in firm size, allowing for more meaningful comparisons across companies of varying scales (La Porta et al., 2000). It aligns dividend payments with the company's total asset base, indicating how effectively a firm utilizes its assets to generate returns for shareholders (Fama & French, 2001). This approach provides insights into a company's financial stability and capital allocation efficiency, as it ties dividend payouts to the overall asset management strategy (Baker & Wurgler, 2004). However, scaling by total assets has disadvantages. Firms with high levels of intangible or non-productive assets might appear less efficient in dividend distribution, skewing comparisons (Brown & Caylor, 2006). Additionally, companies undergoing significant capital investments may show distorted payout ratios, as the asset base increases without immediate corresponding revenue generation (Damodaran, 2012). Differences in accounting practices for asset valuation across companies and countries can also affect the comparability and reliability of these ratios (Basu, 1997). Despite these disadvantages, scaling dividends by assets is generally considered a better measure as it provides a comprehensive view of how effectively a company manages its resources. This method is commonly used in finance research and modelling dividend policy due to its ability to offer deeper insights into a firm's overall financial health and efficiency.

For robustness checks, it will also employ two additional scaling measures: (1) dividends scaled by the number of shares (*DPS)*, a methodology akin to studies (e.g., Leary & Michaely, 2011, Jeong, 2013; Javakhadze et al., 2014); and (2) dividend yield (*DIVYIELD*), calculated as the dividend per share divided by the market price per share, as utilised prior studies (E.g., Baker & Weigand, 2015; Chen et al., 2017; Labhane & Mahakud, 2016). Dividend per Share (*DPS*) provides a straightforward measure of the amount of dividend paid per share, making it easy for investors to understand and compare across firms (Gordon, 1962). It directly shows the returns distributed to individual shareholders, aligning with the primary objective of maximizing shareholder value (Brigham & Ehrhardt, 2011). *DPS* facilitates clear communication of a firm's financial performance and dividend policy to investors, aiding in transparency and investor relations (Lintner, 1956). However, *DPS* does have its disadvantages. It does not account for differences in firm size, which can lead to misleading comparisons between large and small firms (Fama & French, 2001). Corporate actions such as stock splits, buybacks, or new issuances can significantly alter the number of shares outstanding, affecting the consistency of DPS over time (Grullon & Michaely, 2002). Additionally, *DPS* does not provide insights into the company's asset utilization or investment efficiency, potentially overlooking critical aspects of financial health (DeAngelo et al., 2006). Despite these limitations, *DPS* remains a valuable measure in modelling dividend policy. Its clarity and directness in showing shareholder returns make it an essential tool for assessing dividend distribution, especially when complemented with other financial metrics to provide a more comprehensive view of a company's performance.

On the other hand, dividend yield (*DIVYIELD*) provides a relative measure that adjusts for the share price, facilitating comparisons across firms of different sizes (Damodaran, 2002). It can reflect market sentiment regarding the company's dividend policy and financial health, as higher yields may indicate undervaluation or higher risk (Fama & French, 1988). The dividend yield is an integral part of the total return for shareholders, combining both capital gains and dividend income, offering a comprehensive view of investment performance (Gordon, 1959). However, the dividend yield has its disadvantages. Since it is influenced by share price, it can be volatile and may fluctuate significantly due to market conditions, which can distort assessments (Lintner, 1956). High dividend yields might be misinterpreted as positive without considering the reasons behind low share prices, such as financial distress or declining growth prospects (Baker & Wurgler, 2004). Additionally, an emphasis on dividend yield might lead to a focus on short-term market movements rather than long-term corporate performance and dividend policy consistency (DeAngelo et al., 2006). Despite these

drawbacks, dividend yield remains a valuable measure in modelling dividend policy. Its ability to reflect both the income return and market valuation makes it essential for evaluating the attractiveness of investments, helping investors assess the overall yield and stability of their returns. This dual perspective continues to make dividend yield a commonly used and important metric in financial analysis.

4.3.2.2 Measurement of Investor Protection

This study assesses investor protection through the utilisation of the Investor Protection Index, with a specific focus on minority shareholder rights. This index gauges the degree to which shareholders can shield themselves from potential misuse of corporate assets by management and directors for personal gain. Comprising three essential attributes, the index collectively reflects investor protection: (i) the shareholder's legal ability to pursue officers and directors in cases of misconduct (*SHIND*); (ii) the accountability of directors for instances of self-dealing (*DIRLIA);* and (iii) the transparency of related-party transactions through disclosure (*DISIND*) (Goyal & Muckley, 2013; Athari, 2016). Consequently, the investor protection index (*INVPRO*) is computed by assigning equal weight to ShInd, DirLia, and DisInd for each country on an annual basis. This index ranges from 0 to 100, with higher values indicating more robust investor protection. This metric offers advantages over other indices, providing relatively objective benchmarks for evaluating the regulatory framework and the enforcement of protections for minority shareholders (Goyal & Muckley, 2013).

The data regarding investor protection is derived from the World Bank Governance Indicators, which compiles insights on governance quality from a diverse range of enterprises, citizens, and experts in both advanced and developing countries (Donadelli et al., 2014).

4.3.2.4 Measurement of property rights

This study evaluates property rights using the Property Rights Index (PR), following the framework proposed by Ghoul et al., (2017) and Machokoto et al., (2021). To conduct this assessment, it draws upon data sourced from the Economic Freedom of the World (EFW) report, a publication by the Fraser Institute. The EFW report assesses the quality of the legal system, including the protection of property rights, as part of its evaluation of the Legal System and Property Rights. The Property Rights Index is assigned scores on a scale ranging from 0 to 10, with higher values indicating more effective enforcement of property rights.

4.3.2.5 Measurement of Corruption

The study evaluates corruption using the World Bank's Control of Corruption Index (*CCI*), which reflects the perceived extent to which public power is exploited for personal gain. This includes both minor and major instances of corruption, as well as the influence of elites and private interests on the state. The *CCI* is graded on a scale of approximately -2.5 (indicating weak control and high corruption) to 2.5 (indicating strong control and low corruption). One notable advantage of this index is its comprehensive consideration of both public and private perceptions of corruption within a country (Burns et al., 2021). Moreover, the World Bank Index is preferred, due to its reliance on a broader array of corruption perception surveys compared to Transparency International data (Bohara et al., 2004). However, some studies choose to use the Corruption Perception Index (*CPI*), an annual release by Transparency International. While the CPI is widely utilised, it does have certain limitations, including susceptibility to change due to varying perceptions and biases among surveyed businesspersons and analysts, as well as discrepancies in data availability (Brown et al., 2013).

4.3.2.6 Measurement of Press Freedom

To evaluate press freedom, this study relies on annual data extracted from Freedom House reports spanning the years 2006 to 2020. Employing the variable (*PF*) as a proxy for press freedom aligns with previous studies by Ahrend (2002), Almaskati et al., (2020), Brunetti and Weder (2003), Chowdhury (2004), Dutta and Roy (2009), Dutta and Roy (2016), and Kalenborn and Lessmann (2013). This proxy is derived from the annual Freedom of the Press report published by Freedom House, which assesses both the media's effectiveness in monitoring daily life, and the degree of independence enjoyed by journalists in each country (Almaskati et al., 2020). The press freedom score ranges from 0 to 100 points, with higher scores indicating lower levels of press freedom. The score categories are as follows: good (0-15 points), satisfactory (15.01 to 25 points), problematic (25.01 to 35 points), poor (35.01 to 55 points), and very poor (55.01-100).

We standardise variables to fluctuate between 0-100, following the approach of Dutta and Roy (2016) and Kalenborn and Lessmann (2013), where higher values signify a more favourable situation, specifically higher levels of press freedom. To achieve this recoding, we subtract each country's press freedom score from 100. This recoding simplifies the interpretation of coefficients (Kalenborn & Lessmann, 2013).

4.3.2.7 Measurement of Financial Development

In order to address the limitations associated with using single, narrow indicators, such as the size of the stock market or the size of the banking sector, as proxies for financial development, we adopt a comprehensive Financial Development Index (*FD*) proposed by Svirydzenka (2016). Evaluating financial development solely through the size of these individual components presents a limitation in that it primarily assesses the depth of financial markets. However, as argued by De Vita et al., (2020), such narrow measures fail to capture the multifaceted nature of financial development, especially considering the diverse financial systems across countries. Financial institutions encompass banks, insurance companies, mutual funds, and pension funds, while financial markets comprise stock and bond markets. Therefore, the Financial Development Index combines two key components, namely: the Financial Institutions Index (*FII*) and the Financial Markets Index (*FMI*). This index offers a comparative ranking of economies based on their performance in terms of access, depth, and efficiency of both financial institutions and financial markets (see Machokoto et al., 2021; Svirydzenka, 2016).

The Financial Institutions Index (*FII*) is composed of the Financial Institutions Depth Index (*FID*), Financial Institutions Efficiency Index, and Financial Institutions Access Index (FIA) (Machokoto et al., 2021). Meanwhile, the Financial Markets Index (*FMI*) incorporates the Financial Markets Depth Index (*FMD*), Financial Markets Efficiency Index (*FME*), and Financial Markets Access Index (*FMA*) (Machokoto et al., 2021). The advantage of this recently developed financial development measure, compared to alternative indicators, lies in its extensive coverage of country-year observations (De Vita et al., 2020).

4.3.2.7 Measurement of World Bank governance indicators.

We utilise the four World Bank Governance institutional quality indices provided by the World Bank. These indices are measured on a scale ranging from approximately -2.5 (indicating weak institutional quality) to 2.5 (representing strong institutional quality), aligning with methodologies employed in prior studies (see Alam et al., 2019; Canh et al., 2019; Machokoto et al., 2021). The governance indicators include Political Stability, Governance Effectiveness, Regulatory Quality, and Rule of Law.

For more information on how variables are measured and their sources, refer to Table 4.2.

Table 4.2: Variable measurement and data sources

Name of variable	Definition(measurement)	Source
DivAssets	Dividend paid dividend by total assets	(Benavides et al., 2016; Ha et al., 2017; Nowak et al., 2021)
Dividend per share (*DPS*)	The total amounts declared as dividends divided by the total shares outstanding	(Leary & Michaely, 2011; Jeong, 2013; Javakhadze et al., 2014)
Earnings Per Share (EPS)	Earnings divided by the number of shares	(Al Malkawi et al.,2014; Jeong,2013)
Earnings to Total Assets (ETA)	Earnings divided by total assets	(Ha et al., 2017; Nowak et al., 2021)
Dividend Yield (*DivYield*)	Dividend per share divided by the market price per share	(Baker & Weigand, 2015; Chen et al., 2017; Labhane & Mahakud, 2016)
Investor protection (*INVPRO*)	The Strength of Investor Protection Index is the average of the Extent of Disclosure Index, Extent of Director Liability Index, and the Ease of Shareholder Suits Index. The score ranges from 0 to 100, where 0 represents the worst regulatory performance and 100 the best regulatory performance. Source: www.doingbusiness.org	(Athari et al., 2016; Athari, 2022; Goyal & Muckley, 2013)
Property rights (*PR*)	Property rights indicate the level of economic freedom concerning the legal system and property rights security. Source: https://www.fraserinstitute.org/economic-freedom/approach	(Ghoul et al., 2017; Machokoto et al., 2021)
Corruption of Corruption Index (*CCI*)	The control of corruption variable ranges from approximately –2.5 (weak control meaning high corruption) to 2.5 (strong control meaning low corruption	(Bohara et al., 2004; Burns et al., 2021)

Press Freedom (*PF*)	It measures the strength of the media's monitoring role in everyday life and the degree of independence enjoyed by journalists in a particular country. We scale variables to fluctuate between 0-100 where higher numbers indicate a better situation, namely higher levels of press freedom or rather higher scores denote a freer environment (so zero implies the least freedom of the press). https://public.knoema.com/sqezrgd/world-press-freedom-index	(Ahrend, 2002; Almaskati et al., 2020; Brunetti and Weder, 2003; Chowdhury, 2004; Dutta and Roy, 2009; Dutta and Roy, 2016; Kalenborn and Lessmann, 2013)
Profitability (*ROA*)	The ratio of the profit after tax but before interest to total assets	(Benlemlih, 2019; Fidrmuc & Jacob, 2010)
Tobin's Q estimation (TOBINS*Q*)	The sum of the book value of debt and market value of equity divided by the book value of total assets	(Ha et al., 2017) Nowak et al.,2021)
Firm size (*SIZE*)	Natural logarithm of total assets	(Andres et al., 2015;Javakhadze et al., 2014; Nowak et al., 2021; Syed et al., 2018)
Maturity (Age)	The number of years the firm since incorporation	(Andres et al., 2015)(Nowak et al., 2021)(Syed et al., 2018)
Sales Growth (*SALESGROWTH*)	One-year annual growth of sales	Esqueda (2016)
Cash ratio (*Cashratio)*	Cash and cash equivalents divided by total assets	(Burns et al., 2015; Boţoc & Pirtea, 2014)
DebtRatio *(DebtRatio*)	The sum of short and long-term debt as a percentage of the total assets	(Burns et al., 2015; Boţoc & Pirtea, 2014)
Financial Development *(FD*)	The Financial Development Index is the average of the Financial Markets Index (FMI) and the Financial Institutions Index (FII) Source: https://data.imf.org	(De Vita et al., 2020; Machokoto et al., 2021; Svirydzenka, 2016)
Financial Institutions Index (*FII*)	Combination of Financial Institutions Depth index (FID), Financial Institutions Efficiency index (FIE), and Financial Institutions Access index (FIA). Source: https://data.imf.org	(De Vita et al., 2020; Machokoto et al., 2021; Svirydzenka, 2016)

Financial Market Index (*FMI*)	The Financial Markets index (FMI) is a combination of the Financial Markets Depth index (FMD), Financial Markets Efficiency index (FME), and Financial Markets Access index (FMA). Source: https://data.imf.org	(De Vita et al., 2020; Machokoto et al., 2021; Svirydzenka, 2016)
Economic growth	Measures economic growth using the natural logarithm of GDP per capita in 2010 USD constant prices.	(Gul et al, 2015; Yesu and Adesui, 2016)
Regulatory quality (*Regqua*)	Regulatory quality is an index that captures the perception of the government's ability to formulate and implement suitable policies and regulations that promote and allow the development of the private sector.	(Orlova and Sun, 2018; Canh et al, 2019)
Rule of law (*Rullaw*)	Captures perceptions of the extent to which agents have confidence in and abide by the rules of society and in particular the quality of contract enforcement, property rights, the police, and the courts, as well as the likelihood of crime and violence.	(Alam et al., 2019; Seitz & Watzinger, 2017; Canh et al., 2019)
Political Stability (*PolitStab*)	Captures perceptions of the probability of political instability and violence that are politically motivated, including terrorism.	(Orlova & Sun. 2018; Machokoto et al., 2021)
Government effectiveness (*GovEffec*)	Captures the perception of the quality of civil and public services and the extent of their independence from (political) pressures regarding interference in policy formulation and implementation (World Bank Governance Indicators.	(Almaskati et al., 2020; Machokoto et al., 2021; Orlova & Sun. 2018)
Legal origin (Legal systems)	Legal origin of a country's laws - civil & common law where 1 is common and 0 is a civil law	(Boţoc & Pirtea, 2014; Kousssis, 2019; Machokoto et a., 2021)

4.3.3 Estimation methods

The generalised method of moments (GMM) is employed to estimate the dynamic panel model, which explores the relationship between a dependent variable and a set of independent variables in a dynamic context, where both variables change over time and across individuals or groups. In dynamic panel models, the independent variables are not strictly exogenous (endogenous) and are correlated with past and possibly current errors, often exhibiting heteroscedasticity and correlation within individuals.

GMM is well-suited for estimating such models, offering advantages such as accommodating lagged variables, endogenous variables, and measurement errors. The GMM estimator is consistent and asymptotically normal under weak assumptions, making it preferable to other estimators like Ordinary Least Squares (OLS). Common GMM types include GMM-in-first differences proposed by Arellano and Bond (1991) and system GMM proposed by Blundell and Bond (1998), with the latter demonstrated to be superior. System GMM introduces more instruments to enhance efficiency, transforming them to be exogenous and uncorrelated with fixed effects while minimising data losses. It controls for endogeneity, omitted variables bias, unobserved panel heterogeneity, and measurement errors, although it is complex and may lead to misleading results (Naceur et al., 2006).

To address autocorrelation and heteroscedasticity, GMM estimations control for lagged values of the dependent variable (David et al., 2006). Following Koussis and Makrominas (2019) and Benlemlih (2019), the coefficients for dividend smoothing are compared in split samples based on weak vs. strong institutional quality. The sample is divided into sub-samples based on whether the country is above-median (high) or below-median (low) for each corresponding non-dichotomous institutional factor. For dichotomous measures, countries are categorised based on the presence or absence of the institutional variable.

To ensure robust analysis, the dataset underwent winsorisation at the top and bottom 5% for each year. This procedure was carried out to mitigate the influence of outliers, a practice supported by prior studies such as Adhikari and Agrawal (2018), Alzahrani and Lasfer (2012), and Athari (2022), among others.

4.3.4 Model specification

In line with the extant literature (e.g. Koussis & Makrominas, 2019; Ha et al., 2017; Nowak et al., 2021), the study adopts the following specification for the panel data:

$$D_{i,t} = b_0 + b_1 D_{i,t-1} + b_2 E_{i,t} + \beta_{3-5} Controls_{it} + \omega_j + \eta_t + \varepsilon_{i,t} \qquad \textbf{(4.3)}$$

Where $D_{i,t}$ denotes the target level of dividends for firm i in year t, $D_{i,t-1}$ is first-lagged dividends, $E_{i,t}$ represents firm i's earnings in year t. The SOA expresses how rapidly companies adjust their dividends based on target payout ratios and is estimated as (1- b_1) from equation 1(See., Koussis and Makrominas, 2019; Nowak et al.,2021). SOA measures the speed with which firms adjust their dividends and is estimated higher value of SOA indicates a speedier adjustment and subsequently less stable dividend payout (Benlemlih, 2019) and less smoothing (Almalkawi et al.,2014). Furthermore, $Controls_{it}$ are the control variables *Debt ratio, cash ratio* and *Tobins Q*, ω_j and η_t denote unobserved country-specific and year-specific effects, respectively, whereas and $\varepsilon_{i,t}$ is the error term. The dependent variables will be Dividends to Assets (*DivAssets*), Dividend Per Share (*DPS*), and Dividend Yield (*DIVYIELD*). Tobin's Q is included as an additional determinant in the target payout equation, given its relevance as prior studies have indicated its impact on firms' dividend payout policies, particularly on growth opportunities (Ha et al., 2017). Another determinant, cash and cash equivalents divided by total assets (*CASHRATIO*), is introduced based on previous research (e.g., Burns et al., 2015; Boumosleh and Cline, 2015), which has established a positive correlation between excess cash and dividend payments, arguing that a cash shortage results in fewer distributed dividends. Additionally, a control variable, the total debt to total assets ratio (DebtRatio), is incorporated in light of prior studies (E.g., Arko et al., 2014; Boţoc & Pirtea, 2014; Kaźmierska-Jóźwiak, 2015; Nuhu, 2014), which suggest a negative relationship between the debt ratio and dividend payout policy. This is attributed to the need to fulfill financial obligations associated with debt contracts and a desire to manage financial risk.

4.4 Empirical results

4.4.1 Descriptive statistics

4.4.1.1 Summary statistics for the entire sample

Table 4.3 provides descriptive statistics for the entire sample. The mean SOA is 0.430, calculated using *DIVASSETS*, akin to Almalkawi (2005). The average dividend payout ratio is 5.4% using *DIVASSETS*, indicating that firms distribute 5.4 percent of their total assets as dividends to shareholders. The mean (median) value of *DPS* is 0.259 (0.073) USD, indicating that, on average, shareholders of African-listed firms receive 0.259 USD, while less than half of the shareholders receive a dividend value of 0.073 USD. The highest value of *DPS* is 1.699 USD, indicating that some African investors receive 1.699 USD for each share owned in these companies.

On average, Investor Protection (*INVPRO*) and Property Rights Protection (*PR*) have scores of 62.467 and 5.78, respectively. The mean score for Press Freedom (*PF*) is high at 70.984, while the Control of Corruption Index (*CCI*) is low at -0.274, indicating limited corruption control in Africa and suggesting high levels of corruption. Financial development (*FD*) averages 0.399, indicating low financial development, referencing underdeveloped financial markets and financial institutions. The Financial Institutions Index (*FII*) is 0.452, and the Financial Market Index is 0.331, both suggesting undeveloped financial institutions and financial markets. Concerning country-level governance indicators, Government Effectiveness (*GOVEFF*) is -0.133, Political Stability (*POLITSTAB*) is -0.686, Regulatory Quality (*REGQUA*) is -0.082, and the Rule of Law (*RULELAW*) is -0.243. Overall, country-level governance in Africa is poor, indicating weak institutional quality in Africa.

Regarding legal systems, the results show that most countries have common law systems. For firm-level variables, Earnings Per Share (*EPS*) is 0.514 USD, Debt Ratio (*DEBTRATIO*) is 0.129, Cash Ratio (CASHRATIO) has a mean value of 0.117, while Tobin's Q (TOBINSQ) averages 1.719. Mean values for Sales Growth (*SALESGROWTH*) and Size (*SIZE*) are 12.794 and 1051.984 USD, respectively. GDP per Capita (*GDPPERCAPITA*) has a mean of 4294.074 USD. The mean age (*AGE*) is approximately 48.792 years.

Table 4.3: Summary statistics

Variable	Obs	Mean	Median	Std. Dev.	Min	Max
SOA	1842	0.430				
DivAssets	1842	0.054	0.036	0.050	0.006	0.190
DPS	1842	0.259	0.073	0.429	0.001	1.699
DivYield	1837	0.078	0.058	0.061	0.009	0.238
EPS	1842	0.514	0.159	0.816	0.003	3.230
ETA	1842	0.097	0.081	0.066	0.014	0.258
InvPro	1842	63.465	70.000	17.401	33.333	80.000
PR	1842	5.788	5.180	1.372	3.840	7.960
PF	1842	70.984	75.000	14.777	45.550	92.000
CCI	1842	-0.358	-0.169	0.488	-1.169	0.303
FD	1842	0.399	0.370	0.169	0.160	0.630
FMI	1842	0.331	0.300	0.140	0.070	0.530
FII	1842	0.452	0.410	0.216	0.180	0.730
Goveff	1842	-0.133	-0.062	0.590	-1.096	0.774
PolitStab	1842	-0.686	-0.340	0.810	-2.042	0.668
Regqua	1842	-0.082	-0.081	0.511	-0.889	0.793
Rullaw	1842	-0.243	-0.105	0.498	-1.146	0.752
TobinsQ	1837	1.719	1.385	0.935	0.717	4.080
SalesGrowth	1840	12.974	8.710	42.590	-80.420	1453.693
SIZE	1842	1051.984	250.212	1825.372	14.335	7035.742
Cash ratio	1842	0.117	0.084	0.104	0.007	0.382
DebtRatio	1842	0.129	0.092	0.132	0	0.422
GDPpercapita	1842	4294.074	3444.268	1936.161	1401.490	7466.695
Age	1842	48.792	46.000	25.950	14.000	107.000
Legalorigin	1842	0.737	1.000	0.441	0	1.000

Note: The provided table encapsulates firm-specific and institutional data for seven African countries during the period from 2006 to 2020. To enhance data robustness, the application of a winsorisation technique at 5% quantiles effectively addressed outliers. Various financial metrics are included, such as *DIVASSETS* representing the dividend paid divided by total assets, *DPS* denoting Dividend Per Share, and *DIVYIELD* indicating the dividend per share divided by the market price per share, EPS is the earnings per share, *ETA* is the earnings to total assets, *INVPRO* is the Investor Protection Index and ranges from 0 to 100, *PR* is property rights index and ranges from 0 to 10, *PF* corresponds to the press freedom index ranges from 0 to 100, *GDPPERCAPITA* is denoted in constant 2010 USD rates and reflects the GDP of a country divided by its population. *FD* is the financial development and ranges from 0 to 1, *FMI* is the Financial Markets Index and ranges from 0 to 1, *FII* is the financial institutions index and ranges from 0 to 1, *GOVEFF* is the Government Effectiveness Index and ranges from -2.5 to 2.5, *CCI* is the control of corruption index and ranges from -2.5 to 2.5, *POLITSTAB* is the Political Stability Index and ranges from -2.5 to 2.5, *RULLAW* is the Rule of Index and ranges from -2.5 to 2.5, *REGQUA* is the regulatory quality index and ranges from -2.5 to 2.5, *TOBINSQ* is determined by the sum of the book value of debt and market value of equity, divided by the book value of total assets; *SIZE* is the natural logarithm of total assets, *CASHRATIO* represents the ratio of cash and cash equivalents to assets, *DEBTRATIO* is the aggregate of short-term and long-term debt to total assets; *ROA* signifies the return on assets, calculated as profit after tax but prior to interest, divided by total assets, and multiplied by 100; *AGE* is the natural logarithm of the number of years since incorporation; Finally, *LEGALORIGIN* refers to either civil law or common law origin.

4.4.1.2 Summary statistics across countries.

Table 4.4 presents descriptive statistics for individual countries, revealing significant variations across various indicators. South Africa boasts the highest representation of firms at 36.90%, while Ghana has the least representation at 2.97%. Notable variations are observed in the SOA, with Mauritius having a low SOA of 0.07, while South Africa records the highest SOA at 0.756. This indicates that Mauritian firms engage in more dividend smoothing than South African firms, suggesting that South African firms do not maintain stable dividend policies and may exhibit volatility in dividend payouts.

In terms of investor protection, Egypt has the lowest mean score at 39.057, while South Africa ranks highest with a mean score of 80. Mauritius excels in property rights protection with a mean of 7.013, whereas Nigeria lags at 4.060. Press Freedom ranges from 55.912 in Egypt to 88.671 in Ghana. Regarding Financial Development, Ghana has the least developed financial development with a mean score of 0.161, while South Africa ranks highest at 0.588. South Africa stands out as the least corrupt country with a mean Control of Corruption Index (CCI) of 0.062, while Nigeria faces high corruption levels with a mean CCI of -1.083.

In terms of country-level governance, Government Effectiveness (*GOVEFF*) is weak in Nigeria, with a mean of -1.039, and strong in Mauritius with a mean of 0.769. Political stability (*POLITSTAB*) is weak in Nigeria with a mean of -1.985 and strong in Mauritius with a mean of 0.666. Furthermore, Regulatory Quality (*REGQUA*) is weak in Nigeria with a mean of -1.055, and strongest in Mauritius with a mean of 0.772. The rule of law is weak in Nigeria and strongest in Mauritius, with means of -1.055 and 0.751, respectively.

Firms in Ghana have the lowest debt ratios at 0.074, while Mauritius has the highest mean debt ratio of 0.189. Sales Growth (*SALESGROWTH*) is highest in Ghana with a mean of 31.109 and lowest in Morocco with a mean of 5.3. *CASHRATIO* demonstrates considerable differences, with Mauritius having the lowest mean at 0.036 and Egypt having the highest mean at 0.193. Tobin's Q (*TOBINQ*) is low for Mauritian firms, and highest for Kenyan firms, with means of 2.032 and 1.154, respectively.

Regarding firm size, Ghanaian firms are small, with a mean size of 90.034 USD, while South African firms are large with a mean of 2085.865 USD. Furthermore, economic growth is low in Kenya with a GDP per capita of 1472.357 USD, and high in Mauritius with a mean GDP per capita of 7422.677 USD. The mean age is low in Egypt with a mean of 36.463 and high in Mauritius with a mean of 56.830. The descriptive statistics underscore variations in institutional quality and affirm the necessity for cross-country analysis.

Table 4.4: Summary statistics across countries

Country	Total	Egypt	Ghana	Kenya	Mauritius	Morocco	Nigeria	South Africa
SOA	0.430	0.509	0.224	0.441	0.070	0.366	0.642	0.756
DivAssets	0.054	0.078	0.045	0.064	0.028	0.062	0.046	0.047
DPS	0.259	0.203	0.042	0.062	0.104	1.227	0.011	0.286
DivYield	0.078	0.119	0.055	0.067	0.048	0.083	0.069	0.069
EPS	0.514	0.417	0.080	0.112	0.288	2.164	0.018	0.603
ETA	0.097	0.116	0.111	0.114	0.055	0.092	0.088	0.095
InvPro	63.465	39.057	63.333	54.052	79.333	46.272	57.722	80.000
PR	5.788	5.286	5.239	4.667	7.013	5.619	4.060	6.840
PF	70.984	55.912	88.671	72.486	79.622	59.841	58.859	82.185
CCI	-0.358	-0.642	-0.056	-0.958	0.289	-0.281	-1.083	0.062
FD	0.399	0.308	0.161	0.171	0.406	0.336	0.220	0.588
FMI	0.331	0.334	0.101	0.072	0.288	0.252	0.225	0.460
FII	0.452	0.266	0.185	0.266	0.510	0.403	0.205	0.695
Goveff	-0.133	-0.602	-0.032	-0.450	0.769	-0.118	-1.039	0.378
PolitStab	-0.686	-1.210	0.028	-1.238	0.666	-0.399	-1.985	-0.097
RegQua	-0.082	-0.537	0.027	-0.252	0.772	-0.158	-0.793	0.338
Rullaw	-0.243	-0.418	0.017	-0.676	0.751	-0.175	-1.055	0.083
tobinsQ	1.719	1.402	1.966	2.032	1.154	1.803	1.901	1.780
SalesGrowth	12.974	11.355	31.109	9.730	8.508	5.300	13.544	14.939
SIZE	1051.984	431.99	90.034	299.004	213.812	376.942	342.182	2085.865
Cashratio	0.117	0.193	0.124	0.102	0.036	0.053	0.105	0.112
DebtRatio	0.129	0.088	0.074	0.077	0.189	0.173	0.144	0.140
GDPpercapita	4294.074	3299.407	1531.979	1472.357	7422.677	2798.478	2404.695	6113.512
Age	48.792	36.463	44.784	56.830	56.695	41.963	52.443	51.848
Legalorigin	0.737	0	1.000	1.000	1.000	0	1.000	1.000
No. of firms	202	43(21.3%)	6(2.97%)	14(6.93%)	11(5.45%)	17(8.42%)	31(15.34%)	80(39.60%)

No. of observations	1,842	350	51	153	105	135	300	748

Notes: This table summarises key statistics for seven African countries from 2006 to 2020. To enhance data robustness, the application of a winsorisation technique at 5% quantiles effectively addressed outliers. Various financial metrics are included, such as *SOA* representing the Speed of Adjustment obtained from the Lintners model. *DIVASSETS* represents the dividend paid divided by total assets, DPS denotes Dividend Per Share, *DIVYIELD* indicates the dividend per share divided by the market price per share, EPS is the earnings per share, *ETA* is the earnings to total assets, *INVPRO* is the investor protection index and ranges from 0 to 100, *PR* is Property Rights Index and ranges from 0 to 10, *PF* corresponds to the Press Freedom Index ranges from 0 to 100, GDPPERCAPITA is denoted in constant 2010 USD rates and reflects the GDP of a country divided by its population. *FD* is the financial development and ranges from 0 to 1, *FMI* is the financial markets index and ranges from 0 to 1, FII is the financial institutions index and ranges from 0 to 1, *GOVEFF* is the Government Effectiveness Index and ranges from -2.5 to 2.5, *CCI* is the Control of Corruption Index and ranges from -2.5 to 2.5, *POLITSTAB* is the Political Stability Index and ranges from -2.5 to 2.5, *RULLAW* is the rule of law index and ranges from -2.5 to 2.5, *REGQUA* is the Regulatory Quality Index and ranges from -2.5 to 2.5, *TOBINSQ* is determined by the sum of the book value of debt and market value of equity, divided by the book value of total assets; *SIZE* is the natural logarithm of total assets, *CASHRATIO* represents the ratio of cash and cash equivalents to assets, *DEBTRATIO* is the aggregate of short-term and long-term debt to total assets; *ROA* signifies the return on assets, calculated as profit after tax but prior to interest, divided by total assets, and multiplied by 100; AGE is the natural logarithm of the number of years since incorporation; Finally, *LEGALORIGIN* refers to either civil law or common law origin.

4.4.1.3 Pearson correlation matrix

Table 4.5 presents the results from Pearson's correlation analysis and VIF for multivariate analysis independent variables. Noteworthy relationships are evident, with some displaying moderate correlation. As anticipated and in line with our hypotheses, dividends to assets (*DIVASSETS*) exhibit a positive and significant correlation with earnings to assets (ETA), Tobin's Q, cash ratio, and debt ratio. Additionally, Dividend per share (DPS) is also significantly correlated with earnings per share (EPS), Tobin's Q, and cash ratio. Furthermore, Table 4.3 indicates that *DIVASSETS* and *DIVYIELD* are negatively correlated with the debt ratio. These pairwise correlations align with expectations.

Table 4.5: Pairwise correlations

Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
(1) DivAssets	1.000								
(2) DPS	0.233*	1.000							
(3) DivYield	0.327*	0.192*	1.000						
(4) EPS	0.168*	0.922*	0.139*	1.000					
(5) ETA	0.647*	0.169*	0.183*	0.227*	1.000				
(6) tobinsQ	0.589*	0.158*	-0.161*	0.104*	0.511*	1.000			
(7) Cashratio	0.264*	-0.110*	0.152*	-0.094*	0.278*	0.080*	1.000		
(8) DebtRatio	-0.233*	0.029	-0.104*	0.022	-0.241*	-0.043*	-0.348*	1.000	

Note: The table presents pairwise correlations for the regression model. All variables used are winsorised at the lower and upper five percentiles. *DIVASSETS* represents the dividend paid divided by total assets, *DPS* denotes Dividend Per Share, *DIVYIELD* indicates the dividend per share divided by the market price per share, *EPS* is the earnings per share, *ETA* is the earnings to total assets, TOBIN Q is determined by the sum of the book value of debt and market value of equity, divided by the book value of total assets, *CASHRATIO* represents the ratio of cash and cash equivalents to assets, *DEBTRATIO* is the aggregate of short-term and long-term debt to total assets. * is statistically significant at 1 percent.

4.4.2 Empirical Results

4.4.2.1 Linters parameters

Table 4.6 presents Lintner's parameters estimated through OLS (Model 1), system GMM (model 3), and Tobit (model 4). In Models 1, 3, 5, 7, 9, 11, 13, 15, and 17, the original Lintner model is run without controls, while in Models 2, 4, 6, 8, 10, 12, 14, 16, and 18, additional controls are included.

The key parameters of interest are the speed of adjustment factor (SOA) and the implicit target payout ratio (TPR), denoted as 'r'. The SOA reflects how swiftly a firm adjusts its dividends toward the target payout ratio, with a lower SOA indicating more dividend smoothing. Our focus is on the dividend to assets measure (*DIVASSETS*). Table 4.6, Model 8, and Model 12 report an estimated SOA of 0.508 and 0.539, suggesting that African firms exhibit a moderate level of dividend smoothing. Notably, the SOA is higher than that reported by Lintner (1956) and Fama and Babiak (1968) for US companies, which were 0.30 and 0.366, respectively. When compared to developed markets, the SOA in our study is nearly similar to that reported by Shervin (1982) in Australia (SOA=0.51) and is close to the SOA reported by Almalkawi (2005) for Jordan is 0.471.

The other parameter of interest in the Lintner model is the implicit target payout ratio 'r' (TPR). According to Lintner (1956), firms establish long-term target payout ratios and gradually move toward them. From models 8 and 12 of Table 4.6, the estimated TPR is 0.521 using OLS and 0.484 using system GMM for African firms, comparable to Lintner's finding for US firms (0.50 of earnings). This means that African firms tend to pay about 48.4% of their earning as dividends. Compared with other emerging markets, our TPR of 0.484 aligns with the values reported by Al-Ajmi and Abo Hussain (2011) for Saudi Arabia (r= 0.43) and Adaoglu (2000) for Turkey (r=0.52). However, it is lower than the TPR reported in other emerging markets such as Al-Yahyaee et al., (2010) for Oman (r=0.70) and significantly higher than that reported by Pandey and Bhat (2007) for India (r = 0.25), Al-Malkawi (2005) for Jordan (r = 0.21) and Wolmarans (2003) for South Africa (r=0.35). The reported r=0.484 of African firms is that they seem to pay high dividends to maintain their reputation and potentially mitigate agency problems in environments characterised by weak institutions.

Table 4.6 Lintners Parameters

	OLS						GMM					
VARIABLE	DPS		DivYiled		DivAssets		DPS		DivYield		DivAssets	
	1	2	3	4	5	6	7	8	9	10	11	12
DPR_{t-1}	0.412***	0.406***	0.693***	0.644***	0.525***	0.492***	0.570***	0.549***	0.740***	0.690***	0.470***	0.461***
	(0.057)	(0.058)	(0.029)	(0.029)	(0.029)	(0.031)	(0.180)	(0.187)	(0.063)	(0.066)	(0.091)	(0.089)
EPS	0.303***	0.303***					0.217**	0.224**				
	(0.029)	(0.029)					(0.084)	(0.087)				
ETA			0.062***	0.199***	0.325***	0.265***			0.067**	0.175***	0.328***	0.261***
			(0.020)	(0.027)	(0.023)	(0.025)			(0.026)	(0.038)	(0.048)	(0.040)
Tobinsq		0.024***		-0.015***		0.007***		0.015***		-0.012***		0.007***
		(0.005)		(0.001)		(0.001)		(0.005)		(0.002)		(0.002)
Cash ratio		-0.038		0.012		0.016		-0.021		0.024*		0.015
		(0.037)		(0.013)		(0.009)		(0.031)		(0.013)		(0.010)
Debt ratio		-0.005		0.016		-0.009		0.014		0.015		-0.007
		(0.035)		(0.011)		(0.006)		(0.031)		(0.012)		(0.005)
Constant	-0.004	-0.038***	0.018***	0.030***	-0.006***	-0.011***	-0.002	-0.025**	0.014***	0.023***	-0.003**	-0.009***
	(0.003)	(0.012)	(0.002)	(0.004)	(0.001)	(0.002)	(0.003)	(0.012)	(0.004)	(0.006)	(0.001)	(0.002)
Observations	1,841	1,836	1,835	1,835	1,841	1,836	1,640	1,636	1,636	1,636	1,640	1636
R-squared	0.900	0.903	0.504	0.536	0.717	0.728						
No. of firms							202	201	201	201	202	201
No. of instruments							16	19	16	19	16	19
Country eff	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year eff	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
AR (2)							0.237	0.258	0.757	0.518	0.136	0.105
Hansen							0.131	0.151	0.126	0.131	0.395	0.397
SOA	0.588	0.594	0.307	0.356	0.475	0.508	0.430	0.451	0.260	0.310	0.530	0.539
TPR	0.515	0.510	0.202	0.558	0.684	0.521	0.504	0.497	0.258	0.565	0.619	0.484

Table 4.6: Continues……

	Tobit					
VARIABLE	DPS		DivYield		DivAssets	
	13	14	15	16	17	18
DPR_{t-1}	0.576***	0.565***	0.613***	0.581***	0.654***	0.609***
	(0.016)	(0.016)	(0.01848)	(0.018)	(0.01502)	(0.015)
EPS	0.150***	0.147***				
	(0.006)	(0.006)				
ETA			0.110***	0.139***	0.161***	0.133***
			(0.012)	(0.014)	(0.008)	(0.007)
Tobinsq		0.013***		-0.010***		0.005***
		(0.004)		(0.001)		(0.001)
Cash ratio		0.049		0.017		0.021***
		(0.036)		(0.011)		(0.006)
Debt ratio		-0.119***		-0.005		-0.014***
		(0.022)		(0.007)		(0.003)
Constant	0.03740	0.007	0.007	0.036**	0.009	0.001
	(0.04680)	(0.048)	(0.015)	(0.016)	(0.006)	(0.007)
Observations		4,984	4,984	4.903	4,984	4,932
R-squared						
No. of firms		356	354	354	356	356
No. of Instruments						
Country eff	Yes	Yes	Yes	Yes	Yes	Yes
Year eff	Yes	Yes	Yes	Yes	Yes	Yes
AR (2)						
Hansen						
SOA	0.424	0.435	0.387	0.482	0.346	0.391
TPR	0.354	0.338	0.284	0.288	0.465	0.340

Note: The table presents Lintner's parameters using OLS, GMM, and Tobit regression models. All variables used are winsorised at the lower and upper five percentiles. DPR_{t-1} is the dividend payout ratio at time t-1. *DIVASSETS* represents the dividend paid divided by total assets, *DPS* denotes Dividend Per Share, *DIVYIELD* indicates the dividend per share divided by the market price per share, *EPS* is the earnings per share, *ETA* is the earnings to total assets, *TOBIN Q* is determined by the sum of the book value of debt and market value of equity, divided by the book value of total assets, *CASHRATIO* represents the ratio of cash and cash equivalents to assets, *DEBTRATIO* is the aggregate of short-term and long-term debt to total assets. *SOA* is the speed of adjustment, *and TPR* is the target payout ratio. For the model coefficients, z-statistics are indicated in parentheses: ***, **, and * denote significance at the 1%, 5%, and 10% levels, respectively.

4.4.2.2 Determinants of Dividend Smoothing

This section examines the cross-sectional variation in the SOA toward target payout from an institutional perspective, connecting dividend smoothing theories such as the agency and information asymmetry theories. For each determinant of dividend smoothing, the study creates partitions of "high" vs. "low" institutional quality. The sample is subdivided based on whether the country is above-median (high) or below-median (low) for each corresponding non-dichotomous firm and institutional factor. The study estimates equation (4.3) on the partitions and compares the coefficients of dividend payout ratio smoothing $(1 - b_1)$ for high and low institutional quality or firm factors. For brevity, the study omits reporting the coefficients of the additional model variables. Table 4.3 presents the results for all determinants using dividends to assets (*DIVASSETS*) as a measure of dividend policy.

The study commences its analysis with firm factors. Consistent with the predictions of the agency cost theory of dividend smoothing, we find that young firms exhibit more dividend smoothing (SOA = 0.550) than old firms (SOA = 0.602), as they are more likely to face high information asymmetry. This implies that young firms tend to pay stable dividends compared to older firms, aligning with the information asymmetry assumptions of dividend smoothing (Leary & Michaely, 2011).

The second partition separates firms based on size (*SIZE*). The results indicate that small firms tend to smooth dividends more, with a low SOA of 0.456, while large firms have a higher SOA of 0.582. This evidence aligns with information asymmetry explanations, suggesting that small firms facing high information asymmetry are more likely to adjust toward the target with a low SOA, indicating more dividend smoothing and consequently more stable dividends. These results are consistent with the findings of Koussis and Makrominas (2019), who observed that smaller and more opaque European banks tend to smooth dividends more.

The last firm factor, namely sales growth, aims to disentangle the effects of growth opportunities, following agency and information symmetry perspectives on dividend smoothing. The results reveal that firms with high sales growth have a lower SOA of 0.440 compared to those with low growth opportunities with an SOA of 0.473. These findings suggest that firms with high sales growth tend to smooth dividends more than firms with low growth opportunities. The results provide support for information asymmetry explanations, arguing that firms with high sales growth should engage in more dividend smoothing as they are riskier and face higher degrees of information asymmetry. These results are consistent with the findings of Leary and Michaely

(2011), who also observed that firms with high growth opportunities tend to engage in more dividend smoothing.

In this section, the study examines the institutional determinants of dividend smoothing. Firstly, the study explores how legal systems influence dividend smoothing practices. It categorizes the sample into civil and common law countries and reveals that civil law countries exhibit a lower SOA of 0.492, indicating more significant dividend smoothing compared to common law countries with a SOA of 0.540. This supports the hypothesis that firms in civil law systems use dividend smoothing as a substitute for weaker governance, aligning with findings from Koussis and Makrominas (2019) and Javakhadze et al., (2014). In Africa, where legal systems vary widely and often face governance challenges, dividend smoothing becomes crucial. Civil law countries in Africa, characterized by potentially weaker shareholder protections and regulatory frameworks, likely engage in dividend smoothing to signal stability and manage governance risks. This strategic use of dividend smoothing aims to bolster investor confidence and maintain predictable dividends despite earnings volatility. Conversely, firms in common law countries within Africa, benefiting from stronger institutional protections, may not need extensive dividend smoothing to address governance concerns. Thus, the study underscores how legal contexts in Africa shape dividend policies, illustrating that firms in civil law jurisdictions in Africa employ dividend smoothing strategically to mitigate governance challenges and enhance investor trust, reflecting broader trends observed in corporate finance literature on legal origins and dividend policy.

The second partition of our study focuses on economic growth within African firms. It divides the sample into low-income and high-income countries, revealing that firms in low-income countries exhibit a lower SOA of 0.540 compared to those in high-income countries with a SOA of 0.637. This supports the hypothesis that firms in low-income African countries engage more in dividend smoothing practices, leading to stable dividend policies. These findings align with research by Yensu & Adusei (2016), indicating higher dividend payments among firms in low-income contexts. In the African context, low-income countries often face heightened agency problems and weaker investor confidence due to less developed financial markets and limited information availability. Therefore, firms in these regions are compelled to smooth dividends or maintain stable dividend policies to align shareholder and managerial interests, mitigate managerial opportunism, and reduce the risks associated with economic volatility. This strategic use of dividend smoothing in low-income African countries reflects efforts to manage information asymmetry and signal financial stability to investors amidst challenging economic conditions.

Next, we delve into how investor protection influences dividend smoothing, particularly in the context of African firms. The study reveals that firms operating in jurisdictions with weak investor protection tend to adopt more pronounced dividend smoothing strategies compared to those in environments with strong investor protection. Specifically, firms in low investor protection settings exhibit a SOA of 0.421, indicating substantial dividend smoothing, whereas firms in high investor protection settings show a higher SOA of 0.744, suggesting less need for dividend smoothing. These findings substantiate our hypothesis that African firms facing weak investor protection engage more frequently in dividend smoothing practices, which aligns with the substitute model proposed by La Porta et al., (2000). This model suggests that in regions with inadequate investor protection, firms use dividend smoothing to establish a stable dividend policy, thereby bolstering investor confidence amidst governance challenges.

Moreover, our results are consistent with existing research (e.g., Al-Malkawi et al., 2014; Javakhadze et al., 2016), indicating that firms operating in environments with weaker shareholder rights tend to prioritize dividend smoothing. According to agency theory, firms in weak investor protection environments encounter heightened agency conflicts, compelling them to smooth dividends as a strategic measure. By doing so, these firms aim to reassure investors and maintain stability in dividend payouts, despite potential fluctuations in short-term earnings. In African contexts, where governance frameworks may vary widely across countries and pose challenges like weak regulatory oversight and political instability, the strategic use of dividend smoothing becomes crucial. Firms may opt for stable dividend policies or smoothing to mitigate the risk of adverse market reactions that could arise from signaling negative financial information. Therefore, the study underscores the importance of understanding how investor protection influences dividend policy decisions in African economies. It highlights that in regions with weaker investor protection, such as many African countries, dividend smoothing serves as a critical tool for navigating governance uncertainties and enhancing long-term investor trust and market stability.

Our analysis regarding the effect of financial development on dividend smoothing reveals that firms operating in low financial development environments in Africa exhibit a lower SOA of 0.409 and more dividend smoothing, contrasting with their counterparts in high development markets who demonstrate a higher SOA of 0.645. This suggests that within Africa, firms adjust their dividend policies differently based on the financial maturity of their operating environments. This observed behavior can be explained through agency cost theory and the concept of information asymmetry. In less developed African markets, firms often encounter higher levels of information asymmetry and agency problems. As a strategic response, these firms engage in

dividend smoothing to mitigate agency costs and reduce information asymmetry, rather than primarily signaling stability as seen in developed economies. Furthermore, limited access to financial institutions and markets in less developed financial systems compels African firms to prioritize dividend smoothing. This strategy helps attract and retain investors who value consistent income streams amidst economic volatility, rather than unpredictable dividend policies tied to short-term earnings fluctuations. Therefore, our results challenge the notion that financial development universally leads to increased dividend smoothing. Instead, they underscore how African firms strategically utilize dividend policies to navigate specific challenges related to agency problems and information asymmetry. By smoothing dividends, these firms aim to enhance their reputation and foster investor confidence within the unique financial landscapes of African markets.

Next, our study delves into dividend smoothing patterns across varying levels of financial institution development. The findings reveal that African firms operating in environments with low-developed financial institutions exhibit a lower SOA of 0.476 and high dividend smoothing, whereas those in environments with high-developed financial institutions demonstrate a higher SOA of 0.688 and less smoothing or less stable dividends. This disparity suggests that the degree of financial institution development significantly influences dividend smoothing practices among African firms. This observation aligns with agency theory, which posits that in environments with underdeveloped financial institutions, firms face challenges such as weak transparency and heightened agency conflicts. Consequently, these firms resort to dividend smoothing as a strategic response to mitigate agency costs and reduce information asymmetry. Moreover, the presence of high information asymmetry further supports the need for dividend smoothing in such environments, where stable dividend policies help to signal reliability and reduce uncertainty for investors. Interestingly, the results do not support the hypothesis that highly developed financial institutions lead to more dividend smoothing. This contrasts with findings in developed economies where stable financial institutions often facilitate greater transparency and lower agency costs, reducing the imperative for dividend smoothing as a risk management strategy. Therefore, within the African context, the study underscores how the development of financial institutions shapes dividend policy decisions. African firms operating amidst varying levels of financial institution development strategically employ dividend smoothing to navigate challenges unique to their environments, enhancing investor confidence and stability in dividend payouts despite the complexities of less developed financial infrastructures.

Next, we explore dividend smoothing behaviors across different levels of financial market development. The findings reveal that African firms operating in less-developed financial markets exhibit a lower SOA of 0.435, whereas those in high-developed financial markets demonstrate a higher SOA of 0.717. This disparity underscores how the development of financial markets influences dividend policy decisions among African firms. This observation aligns with the information asymmetry model, particularly pertinent in less developed financial markets where firms contend with high levels of information asymmetry. In response, these firms employ dividend smoothing as a strategic tool to build investor confidence and mitigate the uncertainties associated with irregular dividend payments. By maintaining stable dividend policies, African firms aim to signal reliability and reduce the perceived risk of investing in markets with less transparent financial infrastructures. Moreover, the study supports agency cost theory, which suggests that in environments with less developed financial markets, firms may face weaker monitoring and supervision mechanisms, potentially leading to higher agency costs and misappropriation risks. In such contexts, dividend smoothing serves as a mechanism to align the interests of shareholders and management, thereby minimizing agency conflicts and promoting stability in dividend payouts. Interestingly, the results contradict the hypothesis that firms in developed financial markets would exhibit greater dividend smoothing. This highlights a unique aspect of dividend policy in African markets, where the strategic use of dividend smoothing is influenced more significantly by the challenges posed by information asymmetry and agency costs rather than by signaling stability in well-established financial markets. Therefore, within the African context, the study underscores how the development level of financial markets shapes dividend policy strategies. African firms operating in less developed financial markets strategically utilize dividend smoothing to navigate specific challenges related to information asymmetry and agency costs, thereby enhancing investor trust and stability in dividend distributions amid the dynamics of evolving financial landscapes.

Furthermore, our study investigates how press freedom influences dividend smoothing practices, revealing insightful patterns across environments with varying levels of press freedom. The findings demonstrate that African firms operating in environments characterized by less press freedom exhibit a low SOA of 0.523 and more dividend smoothing, whereas those in high press freedom environments show a higher SOA of 0.621 and less dividend smoothing. This suggests that press freedom plays a significant role in shaping dividend policy decisions among African firms. This observation aligns with information asymmetry theories, which posit that lower press freedom contributes to higher levels of information asymmetry. In environments with restricted press freedom, African firms may face challenges in transparently

communicating their financial performance to investors. Consequently, these firms employ dividend smoothing as a strategic approach to mitigate information asymmetry and reassure investors of their financial stability. Furthermore, high press freedom environments are associated with enhanced investor protection, robust corporate governance practices, improved monitoring mechanisms, and lower corruption levels. These factors collectively contribute to greater transparency and accountability in financial reporting, reducing the necessity for dividend smoothing as a means of mitigating agency problems. However, in African contexts where press freedom is limited, the study suggests that agency problems may be more pronounced. This scenario necessitates increased dividend smoothing to align shareholder and management interests, thereby promoting stability in dividend policies and enhancing investor confidence amidst governance challenges. Therefore, within Africa, the study underscores how variations in press freedom influence dividend policy strategies. African firms operating in environments with restricted press freedom strategically utilize dividend smoothing to navigate heightened information asymmetry and agency challenges, aiming to foster investor trust and stability in dividend distributions amid the complexities of media and governance dynamics in their respective markets.

Next, our study explores how property rights influence dividend smoothing patterns, revealing significant insights into dividend policy decisions across environments characterized by varying degrees of property rights protection. The findings indicate that African firms operating in environments with weak property rights exhibit a low SOA of 0.496, indicating greater dividend smoothing compared to firms in environments with stronger property rights, where the SOA is higher at 0.619. This underscores the impact of property rights on dividend policy strategies among African firms. The observed behaviour aligns with agency cost and information asymmetry theories, which are particularly relevant in environments with weak property rights. Firms operating in such contexts often face heightened risks of expropriation and encounter higher agency costs and information asymmetry challenges. As a strategic response, these firms engage in dividend smoothing to mitigate the risks associated with uncertain property rights regimes. By maintaining stable dividend policies, African firms seek to reassure investors and mitigate the perceived risks of investing in markets where property rights are not securely enforced. Our study aligns with prior research showing firms, including multinational corporations, strategically use dividends to manage agency costs in weak property rights environments. This approach aligns shareholder and management interests, promoting stable dividend payouts despite governance challenges. In African contexts, our

findings underscore how property rights strength shapes dividend policies. Firms in weaker property rights environments use dividend smoothing as a risk management tool, aiming to enhance investor confidence and stability amidst regulatory and governance complexities.

Furthermore, our study explores how the governance factor of corruption influences dividend smoothing patterns using the Control of Corruption Index. We find that firms in African countries with low control of corruption (high corruption) exhibit higher dividend smoothing (SOA = 0.507), whereas those in countries with high control of corruption (low corruption) show lower dividend smoothing (SOA = 0.619). This supports our hypothesis and reflects the impact of corruption on dividend policy decisions among African firms. The observed behaviour aligns with La Porta's substitute model, where firms in corrupt countries compensate for weak governance by maintaining stable dividend payouts. This strategy aims to signal stability and reassure investors amidst governance uncertainties. Moreover, in highly corrupt environments, firms often experience high growth and profitability. To manage the agency costs associated with free cash flow and signal growth potential, these firms strategically engage in dividend smoothing, adjusting their payouts to align with target levels. Therefore, within the African context, our findings illustrate how corruption levels influence dividend policy strategies. African firms operating in countries with higher corruption use dividend smoothing as a mechanism to mitigate governance risks and signal stability to investors. This strategic use of dividends helps enhance investor confidence and manage agency costs amidst the challenges posed by corruption in African markets.

Lastly, our study explores how country-level governance factors influence dividend smoothing patterns, focusing on governance effectiveness, political stability, regulatory quality, and the rule of law. The findings confirm our hypothesis that firms operating in African countries with weak governance tend to engage in more dividend smoothing, aligning with agency theory. Specifically, firms in African countries with low governance effectiveness exhibit a lower Smoothed Operating Average (SOA) of 0.499 compared to those in countries with high governance effectiveness, which have a higher SOA of 0.604. Similarly, firms facing weak political stability show a lower SOA of 0.523, while those in politically stable environments have a higher SOA of 0.572. Furthermore, firms operating in weak regulatory environments demonstrate a lower SOA of 0.534, compared to those in strong regulatory environments with an SOA of 0.541. Similarly, firms in environments with weak rule of law have a lower SOA (0.535) compared to those in strong rule of law environments. These results underscore how African firms adjust their dividend policies in response to governance

challenges. Weak governance can exacerbate agency conflicts and increase the risk of resource misappropriation. Thus, firms strategically employ dividend smoothing to signal financial stability and mitigate investor concerns about potential mismanagement or expropriation in environments where governance is weak (Leary & Michaely, 2011). Therefore, within the African context, our findings highlight how variations in country-level governance factors influence dividend policy decisions. African firms operating in environments with weaker governance use dividend smoothing as a risk management tool, aiming to enhance investor confidence amidst governance uncertainties. This strategic approach helps maintain stability in dividend payouts and signals resilience in navigating regulatory and governance challenges unique to African markets.

Table 4.7: Institutional determinants of dividend smoothing

	Age		Size		Sales growth		Legal origin		Economic growth	
Variables	Low	High	Low	High	Low	High	Civil	common	Low	High
$DivAsset_{t-1}$	0.450***	0.398***	0.544***	0.418***	0.527***	0.560***	0.508***	0.460***	0.460***	0.363***
	(0.140)	(0.112)	(0.087)	(0.109)	(0.105)	(0.141)	(0.164)	(0.092)	(0.094)	(0.099)
ETA	0.272***	0.241***	0.166***	0.310***	0.267***	0.177***	0.286***	0.209***	0.276***	0.263***
	(0.067)	(0.049)	(0.036)	(0.060)	(0.051)	(0.052)	(0.071)	(0.043)	(0.047)	(0.051)
TobinQ	0.010***	0.010***	0.009***	0.007**	0.006***	0.009***	0.007	0.009***	0.008***	0.011***
	(0.003)	(0.003)	(0.002)	(0.003)	(0.002)	(0.003)	(0.005)	(0.002)	(0.003)	(0.004)
Cash Ratio	0.010	-0.011	0.009	0.015	0.002	0.004	-0.007	0.012	0.005	0.009
	(0.011)	(0.012)	(0.009)	(0.018)	(0.011)	(0.013)	(0.015)	(0.011)	(0.013)	(0.014)
DebtRatio	-0.007	-0.012*	-0.016**	-0.012	-0.010	-0.016**	-0.026**	-0.004	-0.017**	0.003
	(0.009)	(0.007)	(0.007)	(0.011)	(0.008)	(0.007)	(0.010)	(0.006)	(0.008)	(0.009)
Constant	-0.017***	-0.009**	-0.002	0.009	-0.015***	-0.014**	0.001	-0.008	-0.011**	-0.016***
	(0.005)	(0.003)	(0.004)	(0.006)	(0.003)	(0.005)	(0.005)	(0.005)	(0.005)	(0.005)
Observations	791	845	804	832	842	794	425	1211	800	836
Number of firms	111	117	115	106	195	189	60	141	110	117
No. of instruments	38	38	38	38	38	38	33	36	36	34
Country Dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year Dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
AR (2)	0.554	0.498	0.474	0.044	0.084	0.081	0.447	0.189	0.411	0.406
Hansen (P value)	0.544	0.549	0.955	0.532	0.336	0.549	0.828	0.360	0.282	0.265
SOA	0.550	0.602	0.456	0.582	0.473	0.440	0.492	0.540	0.540	0.637
TPR	0.496	0.400	0.364	0.533	0.564	0.402	0.581	0.387	0.511	0.413

Table 4.7: Continues …….

	Investor protection		Financial Development		Financial institutions development		Financial markets development		Press Freedom		Property rights	
Variables	Low	High	Low	High	Low	High	Low	High	Low	High	Low	High
$DivAsset_{t-1}$	0.579***	0.256***	0.531***	0.355***	0.524***	0.312***	0.565***	0.283***	0.477***	0.378***	0.504***	0.381***
	(0.085)	(0.096)	(0.100)	(0.082)	(0.096)	(0.092)	(0.101)	(0.074)	(0.103)	(0.078)	(0.101)	(0.107)
ETA	0.240***	0.254***	0.245***	0.283***	0.233***	0.296***	0.215***	0.322***	0.256***	0.257***	0.237***	0.283***
	(0.043)	(0.057)	(0.042)	(0.051)	(0.040)	(0.053)	(0.043)	(0.045)	(0.049)	(0.045)	(0.041)	(0.059)
TobinQ	0.005**	0.013***	0.006**	0.010***	0.008***	0.011***	0.007**	0.011***	0.008***	0.011***	0.007***	0.011***
	(0.002)	(0.004)	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)	(0.002)	(0.003)
Cash Ratio	0.003	0.010	0.002	0.007	0.001	0.010	-0.000	0.008	0.010	0.012	0.003	0.000
	(0.012)	(0.017)	(0.011)	(0.014)	(0.012)	(0.016)	(0.013)	(0.013)	(0.010)	(0.013)	(0.012)	(0.013)
DebtRatio	-0.015**	0.004	-0.018**	0.000	-0.017**	0.003	-0.020**	-0.004	-0.014**	-0.005	-0.015*	-0.001
	(0.007)	(0.010)	(0.007)	(0.010)	(0.007)	(0.010)	(0.008)	(0.010)	(0.007)	(0.008)	(0.008)	(0.010)
Constant	-0.000	-0.017***	-0.008**	-0.010*	0.001	-0.016***	-0.008**	-0.025***	-0.006	-0.018***	0.004	-0.019***
	(0.004)	(0.006)	(0.004)	(0.006)	(0.004)	(0.005)	(0.004)	(0.006)	(0.004)	(0.005)	(0.005)	(0.004)
Observations	798	838	821	815	791	845	798	838	815	821	843	793
Number of firms	109	115	114	113	106	105	119	151	165	142	165	155
No. of instruments	36	38	37	34	36	34	37	35	37	36	37	37
Country Dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year Dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
AR (2)	0.238	0.436	0.240	0.185	0.316	0.138	0.164	0.243	0.135	0.831	0.156	0.726
Hansen (P value)	0,361	0.098	0.554	0.588	0.477	0.404	0.299	0.900	0.736	0.692	0.080	0.325
SOA	0.421	0.744	0.469	0.645	0.476	0.688	0.435	0.717	0.523	0.621	0.496	0.619
TPR	0.570	0.341	0.522	0.439	0.489	0.430	0.494	0.449	0.510	0.413	0.780	0.457

Table 4.7: Continues……...

	Control of corruption		Government Effectiveness		Political stability		Regulatory quality		Rule of law	
Variables	Low	High	Low	High	Low	High	Low	High	Low	High
$DivAsset_{t-1}$	0.493***	0.381***	0.501***	0.396***	0.477***	0.428***	0.466***	0.459***	0.465***	0.463***
	(0.109)	(0.076)	(0.101)	(0.101)	(0.109)	(0.096)	(0.112)	(0.098)	(0.118)	(0.097)
ETA	0.276***	0.234***	0.273***	0.256***	0.277***	0.230***	0.285***	0.228***	0.280***	0.223***
	(0.048)	(0.048)	(0.048)	(0.056)	(0.047)	(0.052)	(0.053)	(0.053)	(0.052)	(0.054)
TobinQ	0.007**	0.011***	0.006**	0.009**	0.007***	0.010***	0.007***	0.008**	0.007**	0.008***
	(0.003)	(0.004)	(0.003)	(0.004)	(0.003)	(0.004)	(0.003)	(0.003)	(0.003)	(0.003)
Cash Ratio	0.006	0.002	0.005	0.001	0.008	0.004	0.008	-0.003	0.009	-0.007
	(0.011)	(0.015)	(0.011)	(0.016)	(0.011)	(0.015)	(0.011)	(0.013)	(0.010)	(0.013)
DebtRatio	-0.014**	0.003	-0.015**	0.003	-0.016**	0.002	-0.017**	0.002	-0.014**	0.001
	(0.007)	(0.009)	(0.007)	(0.010)	(0.007)	(0.009)	(0.008)	(0.009)	(0.007)	(0.009)
Constant	-0.000	-0.015***	0.000	-0.012*	-0.000	-0.013**	0.000	-0.011**	-0.003	-0.014***
	(0.004)	(0.005)	(0.004)	(0.007)	(0.004)	(0.005)	(0.004)	(0.005)	(0.004)	(0.005)
Observations	812	824	819	817	813	823	814	822	834	802
Number of firms	106	108	108	108	104	108	105	109	132	106
No. of instruments	36	35	36	35	35	35	36	35	36	35
Country Dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year Dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
AR (2)	0.353	0.134	0.365	0.121	0.372	0.116	0.392	0.105	0.220	0.114
Hansen (P value)	0.367	0.538	0.563	0.127	0.599	0.365	0.582	0.228	0.569	0.302
SOA	0.507	0.619	0.499	0.604	0.523	0.572	0.534	0.541	0.535	0.537
TPR	0.544	0.378	0.547	0.423	0.530	0.402	0,533	0.421	0.523	0.415

This table reports differences in coefficients of dividend smoothness (1- b_1) or SOA coefficients for the regression specification $D_{i,t} = b_0 + b_1 D_{i,t-1} + b_2 E_{i,t} + \beta_{3-5} Controls_{it} + \omega_j + \eta_t + \varepsilon_{i,t}$. The dependent variable is dividends to assets (DIVASSETS). ETA is the earnings to total assets, TOBIN Q is determined by the sum of the book value of debt and market value of equity, divided by the book value of total assets, CASHRATIO represents the ratio of cash and cash equivalents to assets, DEBTRATIO is the aggregate of short-term and long-term debt to total assets. SOA is the speed of adjustment, and TPR is the target payout ratio. A firm is classified as High (Low) AGE if its age is above (below) the sample median. A firm is classified as High (Low) SIZE if its size is above (below) the sample median. A firm is classified as having High (Low) SALESGROWTH if its sales growth is above (below) the sample median. A firm is classified as civil (common) if its legal origin is civil (common) law. A firm is classified as being under High (Low) INVESTOR *PROTECTION* if its Investor Protection Index is above (below) the sample median. A firm is classified as being under High (Low) FINANCIAL *DEVELOPMENT if* its financial development index is above (below) the sample median. A firm is classified as being under High (Low) FINANCIAL *INSTITUTIONAL DEVELOPMENT* if its Financial Institutions Index is above (below) the sample median. A firm is classified as being under High (Low) FINANCIAL *MARKET DEVELOPMENT* if its Financial Markets Index is above (below) the sample median. A firm is classified as being under High (Low) PRESS *FREEDOM* if its Press Freedom Index is above (below) the sample median. A firm is classified as being under High (Low) PROPERTY *RIGHTS* if its Property Rights Index is above (below) the sample median. A firm is classified as being under High (Low) CONTROL *OF CORRUPTION if* its Control of Corruption Index is above (below) the sample median. A firm is classified as being under High (Low) GOVERNMENT *EFFECTIVENESS if* its government effectiveness index is above (below) the sample median. A firm is classified as being under High (Low) POLITICAL *STABILITY if* its Political Stability Index is above (below) the sample median. A firm is classified as being under High (Low) REGULATORY *QUALITY if* its Regulatory Quality Index is above (below) the sample median. A firm is classified as being under the High (Low) RULE *OF LAW* if its Rule of Law Index is above (below) the sample median. For the model coefficients, z-statistics are indicated in parentheses: ***, **, and * denote significance at the 1%, 5%, and 10% levels, respectively.

4.4.3 Robustness checks- Estimations using alternative dividend measures.

To assess the robustness of the institutional determinants of dividend smoothing, we conduct additional analyses that explore the sensitivity of our results to alternative measures of dividend policy, specifically *DPS* and *DIVYIELD*. The findings from these robustness tests using DPS are presented in Table 4.8, and those using *DIVYIELD* are presented in Table 4.9.

Overall, the results indicate that young firms, small firms, and firms with high sales growth tend to smooth dividends. This alternative measure strengthens the primary findings, confirming that firms operating in environments with weak investor protection, less developed financial institutions and markets, restricted press freedom, high corruption, weak property rights, civil law legal systems, and weak country-level governance exhibit a greater tendency to smooth dividends. These firms also adjust to the target with a low Speed of Adjustment (SOA), indicating stable dividend policies. This validation enhances the robustness of our study's outcomes, as the study employs an alternative dividend policy measure to address potential model specification issues.

Table 4.8: Robustness using Dividend Per Share (DPS)

	Age		Size		Sales growth		Legal origin		Economic growth	
Variables	Low	High	Low	High	Low	High	civil	common	Low	High
DPS_{t-1}	0.694***	0.444**	0.813***	0.467**	0.535*	0.759**	0.771***	0.448***	0.808***	0.408***
	(0.233)	(0.172)	(0.122)	(0.180)	(0.282)	(0.304)	(0.133)	(0.166)	(0.119)	(0.147)
EPS	0.145	0.247***	0.079	0.256***	0.210	0.127	0.112*	0.244***	0.097	0.254***
	(0.109)	(0.077)	(0.049)	(0.082)	(0.128)	(0.127)	(0.067)	(0.076)	(0.060)	(0.064)
TobinQ	0.006	0.019***	0.004	0.018***	0.011	0.011	0.011	0.018***	0.002	0.033***
	(0.010)	(0.006)	(0.005)	(0.007)	(0.011)	(0.009)	(0.009)	(0.006)	(0.003)	(0.009)
Cash Ratio	-0.028	-0.079	0.036	-0.027	-0.016	-0.027	-0.045	-0.027	0.017	-0.054
	(0.041)	(0.060)	(0.024)	(0.063)	(0.057)	(0.055)	(0.052)	(0.049)	(0.026)	(0.057)
DebtRatio	-0.013	-0.006	0.007	0.039	-0.013	-0.014	-0.001	0.004	0.011	0.012
	(0.037)	(0.031)	(0.017)	(0.050)	(0.034)	(0.032)	(0.037)	(0.035)	(0.013)	(0.048)
Constant	0.002	-0.028*	-0.015	-0.037	-0.017	-0.013	-0.021	-0.027*	-0.002	-0.033
	(0.023)	(0.017)	(0.009)	(0.022)	(0.012)	(0.023)	(0.036)	(0.016)	(0.009)	(0.020)
Observations	791	845	804	832	842	794	425	1211	800	800
Number of firms	111	117	115	106	195	189	60	141	110	110
No. of instruments	38	38	38	38	38	38	33	36	36	36
Country Dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year Dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
AR (2)	0.114	0.779	0.045	0.506	0.481	0.188	0.381	0.439	0.221	0.221
Hansen (P value)	0.090	0.116	0.365	0.316	0.255	0.507	0.228	0.147	0.095	0.095
SOA	0.306	0.556	0.187	0.533	0.465	0.241	0.229	0.552	0.192	0.592
TPR	0.474	0.444	0.422	0.480	0.452	0.527	0.489	0.442	0.505	0.429

[Table 4.8 Continued]

	Investor protection		Financial development		Financial institutions development		Financial markets development		Press Freedom		Property rights	
Variables	Low	High	Low	High	Low	High	Low	High	Low	High	Low	High
DPS_{t-1}	0.776***	0.440***	0.756***	0.438***	0.538***	0.522***	0.788***	0.516***	0.775***	0.373***	0.640***	0.525*
	(0.125)	(0.165)	(0.131)	(0.155)	(0.143)	(0.154)	(0.127)	(0.173)	(0.148)	(0.078)	(0.223)	(0.317)
EPS	0.114*	0.241***	0.125*	0.241***	0.224***	0.204***	0.106*	0.218***	0.113	0.271***	0.162	0.212
	(0.062)	(0.076)	(0.065)	(0.070)	(0.069)	(0.067)	(0.061)	(0.079)	(0.072)	(0.051)	(0.108)	(0.137)
TobinQ	0.004	0.030***	0.003	0.033***	0.004	0.032***	0.002	0.025***	0.003	0.029***	0.007	0.023
	(0.003)	(0.010)	(0.003)	(0.011)	(0.003)	(0.011)	(0.003)	(0.009)	(0.003)	(0.007)	(0.005)	(0.017)
Cash Ratio	0.006	-0.046	0.021	-0.105	0.002	-0.039	0.000	-0.071	0.012	-0.076	-0.046	-0.018
	(0.030)	(0.070)	(0.030)	(0.077)	(0.034)	(0.069)	(0.021)	(0.057)	(0.025)	(0.054)	(0.045)	(0.075)
DebtRatio	0.008	-0.003	0.009	0.009	0.015	-0.010	-0.001	0.005	0.011	-0.010	0.001	0.041
	(0.015)	(0.052)	(0.014)	(0.055)	(0.018)	(0.051)	(0.016)	(0.046)	(0.017)	(0.044)	(0.019)	(0.070)
Constant	-0.017	-0.035	-0.012	-0.049**	-0.005	-0.040*	-0.009	-0.055**	-0.013*	-0.027	-0.015	-0.036
	(0.011)	(0.024)	(0.008)	(0.023)	(0.009)	(0.022)	(0.008)	(0.027)	(0.008)	(0.020)	(0.011)	(0.043)
Observations	798	838	821	815	791	845	798	838	815	821	843	793
Number of firms	109	115	114	113	106	105	119	151	165	142	165	155
No. of instruments	36	35	37	34	36	34	37	35	37	36	37	37
Country Dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year Dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
AR (2)	0.289	0.444	0.317	0.473	0.534	0.268	0.259	0.367	0.177	0.610	0.312	0.355
Hansen (P value)	0.168	0.152	0.057	0.165	0.380	0.077	0.550	0.208	0.182	0.235	0.189	0.142
SOA	0.224	0.560	0.244	0.562	0.462	0.478	0.212	0.484	0.225	0.627	0.360	0.475
TPR	0.509	0.430	0.512	0.429	0.485	0.427	0.500	0.550	0.502	0.432	0.450	

[Table 4.8: Continued]

	Control of corruption		Government Effectiveness		Political stability		Regulatory quality		Rule of law	
Variables	Low	High	Low	High	Low	High	Low	High	Low	High
DPS_{t-1}	0.794***	0.455***	0.655***	0.526***	0.729***	0.395***	0.986***	0.491***	0.704***	0.505***
	(0.101)	(0.157)	(0.159)	(0.169)	(0.151)	(0.134)	(0.095)	(0.156)	(0.181)	(0.136)
EPS	0.105**	0.235***	0.171**	0.201**	0.138*	0.256***	-0.046	0.219***	0.149	0.205***
	(0.051)	(0.075)	(0.076)	(0.077)	(0.074)	(0.069)	(0.052)	(0.071)	(0.091)	(0.059)
TobinQ	0.002	0.032***	0.005	0.029***	0.004	0.032***	0.016**	0.029***	0.004	0.033***
	(0.003)	(0.010)	(0.004)	(0.011)	(0.004)	(0.009)	(0.008)	(0.010)	(0.004)	(0.010)
Cash Ratio	0.040	-0.033	-0.027	-0.057	0.007	-0.068	-0.158***	-0.047	0.001	-0.069
	(0.027)	(0.072)	(0.033)	(0.070)	(0.033)	(0.069)	(0.044)	(0.076)	(0.027)	(0.068)
DebtRatio	0.014	0.007	-0.004	-0.006	0.015	-0.019	-0.094**	0.002	0.015	-0.014
	(0.016)	(0.055)	(0.015)	(0.048)	(0.018)	(0.051)	(0.046)	(0.051)	(0.018)	(0.056)
Constant	-0.011	-0.046*	-0.007	-0.036	-0.016	-0.035	0.048***	-0.043	-0.012	-0.041
	(0.012)	(0.023)	(0.008)	(0.025)	(0.015)	(0.025)	(0.015)	(0.028)	(0.012)	(0.025)
Observations	812	824	819	817	813	823	814	822	834	802
Number of firms	106	108	108	108	104	108	105	109	132	106
No. of instruments	36	35	36	35	35	35	36	35	36	35
Country Dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year Dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
AR (2)	0.242	0.391	0.380	0.294	0.318	0.520	0.317	0.338	0.225	0.295
Hansen (P value)	0.039	0.227	0.229	0.047	0.017	0.321	0.000	0.111	0.048	0.315
SOA	0.206	0.545	0.345	0.474	0.271	0.605	0.014	0.509	0.296	0.495
TPR	0.510	0.431	0.496	0.424	0.509	0.423		0.430	0.503	0.414

This table reports differences in coefficients of dividend smoothness (1- b_1) or SOA coefficients for the regression specification $D_{i,t} = b_0 + b_1 D_{i,t-1} + b_2 E_{i,t} + \beta_{3-5} Controls_{it} + \omega_j + \eta_t + \varepsilon_{i,t}$. The dependent variable is dividends per share (DPS). EPS is the earnings per share. TOBIN Q is determined by the sum of the book value of debt and market value of equity, divided by the book value of total assets, CASHRATIO represents the ratio of cash and cash equivalents to assets, DEBTRATIO is the aggregate of short-term and long-term debt to total assets. SOA is the speed of adjustment, and TPR is the target payout ratio. A firm is classified as High (Low) AGE if its age is above (below) the sample median. A firm is classified as High (Low) SIZE if its size is above (below) the sample median. A firm is classified as having High (Low) SALESGROWTH if its sales growth is above (below) the sample median. A firm is classified as civil (common) if its legal origin is civil (common) law. A firm is classified as being under High (Low) INVESTOR *PROTECTION* if its Investor Protection Index is above (below) the sample median. A firm is classified as being under High (Low) FINANCIAL *DEVELOPMENT if* its financial development index is above (below) the sample median. A firm is classified as being under High (Low) FINANCIAL *INSTITUTIONAL DEVELOPMENT* if its Financial Institutions Index is above (below) the sample median. A firm is classified as being under High (Low) FINANCIAL *MARKET DEVELOPMENT* if its Financial Markets Index is above (below) the sample median. A firm is classified as being under High (Low) PRESS *FREEDOM* if its Press Freedom Index is above (below) the sample median. A firm is classified as being under High (Low) PROPERTY *RIGHTS* if its Property Rights Index is above (below) the sample median. A firm is classified as being under High (Low) CONTROL *OF CORRUPTION if* its Control of Corruption Index is above (below) the sample median. A firm is classified as being under High (Low) GOVERNMENT *EFFECTIVENESS if* its Government Effectiveness Index is above (below) the sample median. A firm is classified as being under High (Low) POLITICAL *STABILITY if* its Political Stability Index is above (below) the sample median. A firm is classified as being under High (Low) REGULATORY *QUALITY if* its Regulatory Quality Index is above (below) the sample median. A firm is classified as being under the High (Low) RULE *OF LAW* if its Rule of Law Index is above (below) the sample median. For the model coefficients, z-statistics are indicated in parentheses: ***, **, and * denote significance at the 1%, 5%, and 10% levels, respectively.

Table 4.9: Robustness using Dividend Yield

	Age		Size		Sales growth		Legal origin		Economic growth	
Variables	Low	High	Low	High	Low	High	civil	common	Low	High
$DivYield_{t-1}$	0.652***	0.547***	0.617***	0.572***	0.727***	0.610***	0.623***	0.547***	0.684***	0.535***
	(0.076)	(0.117)	(0.077)	(0.086)	(0.082)	(0.116)	(0.114)	(0.067)	(0.073)	(0.107)
ETA	0.161***	0.172***	0.214***	0.114**	0.185***	0.128**	0.184**	0.169***	0.183***	0.114**
	(0.047)	(0.061)	(0.056)	(0.049)	(0.038)	(0.060)	(0.082)	(0.039)	(0.050)	(0.051)
TobinQ	-0.014***	-0.010***	-0.015***	-0.008***	-0.010***	-0.012***	-0.016***	-0.012***	-0.012***	-0.011***
	(0.002)	(0.003)	(0.002)	(0.002)	(0.002)	(0.003)	(0.006)	(0.002)	(0.002)	(0.002)
Cash Ratio	0.033*	-0.027	0.012	0.029	0.008	0.007	0.022	0.017	0.007	0.015
	(0.019)	(0.022)	(0.019)	(0.022)	(0.017)	(0.021)	(0.022)	(0.019)	(0.017)	(0.024)
DebtRatio	0.003	0.005	0.004	-0.000	0.012	0.008	0.013	0.007	0.004	0.010
	(0.015)	(0.019)	(0.014)	(0.018)	(0.011)	(0.016)	(0.022)	(0.016)	(0.011)	(0.019)
Constant	0.035***	0.027***	0.038***	0.046***	0.021**	0.038***	0.054***	0.038***	0.031***	0.037***
	(0.010)	(0.009)	(0.011)	(0.012)	(0.009)	(0.010)	(0.017)	(0.008)	(0.008)	(0.008)
Observations	791	845	804	832	842	794	425	1211	800	836
Number of firms	111	117	115	106	195	189	60	141	110	117
No. of instruments	38	38	38	38	38	38	33	36	36	34
Country Dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year Dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
AR (2)	0.462	0.159	0.720	0.410	0.584	0.708	0.811	0.827	0.773	0.711
Hansen (P value)	0.587	0.275	0.679	0.430	0.668	0.048	0.664	0.057	0.442	0.405
SOA	0.348	0.453	0.383	0.428	0.273	0.390	0.377	0.453	0.316	0.465
TPR	0.462	0.400	0.559	0.266	0.678	0.328	0.488	0.373	0.579	0.245

Table 4.9: Continues……...

	Investor protection		Financial development		Financial institutions development		Financial markets development		Press Freedom		Property rights	
Variables	Low	High	Low	High	Low	High	Low	High	Low	High	Low	High
$DivYield_{t-1}$	0.578***	0.543***	0.598***	0.536***	0.598***	0.499***	0.624***	0.503***	0.651***	0.588***	0.696***	0.513***
	(0.076)	(0.102)	(0.077)	(0.121)	(0.136)	(0.113)	(0.072)	(0.107)	(0.077)	(0.088)	(0.079)	(0.091)
ETA	0.232***	0.136***	0.205***	0.144***	0.186***	0.171***	0.187***	0.164***	0.186***	0.158***	0.161***	0.135**
	(0.052)	(0.051)	(0.054)	(0.050)	(0.056)	(0.060)	(0.051)	(0.052)	(0.047)	(0.043)	(0.040)	(0.062)
TobinQ	-0.016***	-0.011***	-0.014***	-0.011***	-0.014***	-0.011***	-0.013***	-0.013***	-0.013***	-0.011***	-0.012***	-0.010***
	(0.003)	(0.002)	(0.003)	(0.002)	(0.003)	(0.002)	(0.002)	(0.003)	(0.002)	(0.002)	(0.002)	(0.003)
Cash Ratio	0.015	0.022	0.019	0.016	0.010	0.016	0.012	0.012	0.021	0.019	0.010	0.003
	(0.018)	(0.025)	(0.020)	(0.027)	(0.024)	(0.030)	(0.019)	(0.025)	(0.018)	(0.022)	(0.014)	(0.026)
DebtRatio	0.015	0.012	0.008	0.019	0.010	0.016	0.009	0.011	0.023*	0.011	0.004	0.011
	(0.014)	(0.020)	(0.013)	(0.018)	(0.019)	(0.019)	(0.012)	(0.019)	(0.012)	(0.018)	(0.009)	(0.025)
Constant	0.045***	0.031***	0.032***	0.045***	0.051**	0.030***	0.035***	0.043***	0.023***	0.024***	0.041***	0.031**
	(0.011)	(0.009)	(0.008)	(0.013)	(0.020)	(0.008)	(0.007)	(0.012)	(0.009)	(0.008)	(0.011)	(0.012)
Observations	793	838	821	815	791	845	798	838	815	821	843	793
Number of firms	109	115	114	113	106	105	119	151	165	142	165	155
No. of instruments	36	36	37	34	36	34	37	35	37	36	37	37
Country Dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year Dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
AR (2)	0.773	0.885	0.629	0.631	0.826	0.755	0.433	0.936	0.999	0.258	0.780	0.693
Hansen (P value)	0.449	0.485	0.481	0.584	0.477	0.636	0.538	0.309	0.600	0.594	0.736	0.225
SOA	0.422	0.457	0.402	0.464	0.402	0.501	0.376	0.497	0.349	0.412	0.304	0.487
TPR	0.550	0.298	0.510	0.310	0.463	0.341	0.497	0.330	0.533	0.383	0.530	0.277

Table 4.9: Continues……

	Control of corruption		Government Effectiveness		Political stability		Regulatory quality		Rule of law	
Variables	Low	High	Low	High	Low	High	Low	High	Low	High
$DivYield_{t-1}$	0.642***	0.518***	0.631***	0.543***	0.649***	0.540***	0.640***	0.532***	0.637***	0.565***
	(0.062)	(0.110)	(0.064)	(0.109)	(0.061)	(0.106)	(0.064)	(0.107)	(0.067)	(0.110)
ETA	0.192***	0.160***	0.192***	0.135***	0.189***	0.145***	0.183***	0.165***	0.176***	0.136***
	(0.041)	(0.055)	(0.045)	(0.049)	(0.042)	(0.051)	(0.041)	(0.052)	(0.042)	(0.051)
TobinQ	-0.014***	-0.010***	-0.013***	-0.010***	-0.013***	-0.010***	-0.013***	-0.010***	-0.013***	-0.010***
	(0.002)	(0.003)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)
Cash Ratio	0.011	0.018	0.014	0.008	0.011	0.014	0.014	0.014	0.011	0.008
	(0.017)	(0.027)	(0.018)	(0.027)	(0.017)	(0.027)	(0.017)	(0.027)	(0.018)	(0.027)
DebtRatio	0.012	0.010	0.014	0.008	0.012	0.012	0.009	0.015	0.010	0.015
	(0.012)	(0.018)	(0.013)	(0.017)	(0.012)	(0.019)	(0.013)	(0.019)	(0.012)	(0.018)
Constant	0.042***	0.031***	0.044***	0.032***	0.041***	0.030***	0.043***	0.024**	0.038***	0.028***
	(0.010)	(0.008)	(0.011)	(0.009)	(0.010)	(0.008)	(0.011)	(0.012)	(0.011)	(0.009)
Observations	812	824	819	817	813	823	814	822	834	802
Number of firms	106	108	108	108	104	108	105	109	132	106
No. of instruments	36	35	36	35	35	35	36	35	36	35
Country Dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year Dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
AR (2)	0.896	0.595	0.824	0.614	0.881	0.561	0.905	0.457	0.970	0.558
Hansen (P value)	0.733	0.528	0.606	0.754	0.768	0.458	0.691	0.522	0.630	0.419
SOA	0.358	0.482	0.369	0.457	0.351	0.460	0.360	0.468	0.363	0.435
TPR	0.536	0.332	0.520	0.295	0.538	0.315	0.508	0.353	0.485	0.313

This table reports differences in coefficients of dividend smoothness (1- b_1) or SOA coefficients for the regression specification $D_{i,t} = b_0 + b_1 D_{i,t-1} + b_2 E_{i,t} + \beta_{3-5} Controls_{it} + \omega_j + \eta_t + \varepsilon_{i,t}$. The dependent variable is dividend yield (DIVYIELD). ETA is the earnings to total assets, TOBIN Q is determined by the sum of the book value of debt and market value of equity, divided by the book value of total assets, CASHRATIO represents the ratio of cash and cash equivalents to assets, DEBTRATIO is the aggregate of short-term and long-term debt to total assets. SOA is the speed of adjustment, and TPR is the target payout ratio. A firm is classified as High (Low) AGE if its age is above (below) the sample median. A firm is classified as High (Low) SIZE if its size is above (below) the sample median. A firm is classified as having High (Low) SALESGROWTH if its sales growth is above (below) the sample median. A firm is classified as civil (common) if its legal origin is civil (common) law. A firm is classified as being under High (Low) INVESTOR *PROTECTION* if its Investor Protection Index is above (below) the sample median. A firm is classified as being under High (Low) FINANCIAL *DEVELOPMENT if* its Financial Development Index is above (below) the sample median. A firm is classified as being under High (Low) FINANCIAL *INSTITUTIONAL DEVELOPMENT* if its Financial Institutions Index is above (below) the sample median. A firm is classified as being under High (Low) FINANCIAL *MARKET DEVELOPMENT* if its Financial Markets Index is above (below) the sample median. A firm is classified as being under High (Low) PRESS *FREEDOM* if its Press Freedom Index is above (below) the sample median. A firm is classified as being under High (Low) PROPERTY *RIGHTS* if its Property Rights Index is above (below) the sample median. A firm is classified as being under High (Low) CONTROL *OF CORRUPTION if* its Control of Corruption Index is above (below) the sample median. A firm is classified as being under High (Low) GOVERNMENT *EFFECTIVENESS if* its Government Effectiveness Index is above (below) the sample median. A firm is classified as being under High (Low) POLITICAL *STABILITY if* its Political Index is above (below) the sample median. A firm is classified as being under High (Low) REGULATORY *QUALITY if* its Regulatory Quality Index is above (below) the sample median. A firm is classified as being under the High (Low) RULE *OF LAW* if its Rule of Law Index is above (below) the sample median. For the model coefficients, z-statistics are indicated in parentheses: ***, **, and * denote significance at the 1%, 5%, and 10% levels, respectively.

4.4.4 Conclusion

This study investigates the institutional determinants of dividend smoothing in African-listed firms from 2006 to 2020. The results show that African firms have a speed of adjustment (SOA) of 0.539, indicating a moderate level of dividend smoothing, and a target payout ratio of 0.484, suggesting that they pay out a high percentage of their earnings as dividends. Firms in low-governance environments exhibit a stronger inclination toward dividend smoothing, as highlighted by Nowak et al., (2021). The results align with information asymmetry models, revealing that young and small firms with increased information asymmetry engage in more pronounced dividend smoothing to signal their quality, a trend identified by Koussis and Makrominas (2019). Additionally, firms experiencing high sales growth, indicative of elevated risk and information asymmetry, also smooth dividends more, echoing findings by Leary and Michaely (2011).

Examining institutional factors, firms in civil law countries and low-income countries tend to lean towards increased dividend smoothing, aligning with the goals of reputation building and addressing prevalent agency problems within these contexts, as highlighted by La Porta et al., (2000) and Yensu and Adesui (2016). Furthermore, the study supports the "substitute" agency model, indicating that firms in environments characterized by weak investor protection and property rights tend to employ more dividend smoothing, resulting in the establishment of stable dividend policies, as noted by La Porta et al., (2000). Additionally, financially underdeveloped environments—marked by weak financial institutions and markets—are associated with heightened dividend smoothing, as observed in prior research. Similarly, regions with low press freedom exhibit increased dividend smoothing due to heightened information asymmetry and agency problems associated with restricted press freedom, as identified by Leary and Michaely (2011). Finally, weak country-level governance is linked to an augmented practice of dividend smoothing, reflecting concerns of misappropriation. In summary, this study underscores that dividend smoothing is intricately connected with weak investor protection, weak property rights, low press freedom, underdeveloped financial institutions and markets, civil law jurisdictions, low economic growth, high corruption, weak governance effectiveness, weak political stability, weak regulatory quality, and weak rule of law (Leary & Michaely, 2011; La Porta et al., 2000; Yensu & Adesui, 2016; Nowak et al., 2021).

In sum, the findings of this study consistently support the agency and information asymmetry model of dividend smoothing. The results suggest that firms in Africa have a conservative dividend policy. Moreover, a low SOA experienced in weak institutional environments means dividends move independently of earnings changes, that is, whether or not a firm's earnings changes, firms will still maintain a stable dividend payout ratio. Therefore, firms do not make an immediate response to

changes in earnings. Possible explanations are that in weak institutional environments, companies opt for stable or smoothed dividends, aiming to bolster investor confidence and foster sustained growth over time, irrespective of short-term earnings fluctuations. The results also indicate that in such environments, firms exercise caution in signalling negative information to prevent adverse market reactions. Moreover, in weak institutional settings, a low SOA towards target payout smoothed dividends or stable dividends serves as a risk mitigation strategy. This strategy signals financial strength and resilience, acting as a safeguard against external uncertainties. The concept of dividend stability or smoothing not only signifies reliability but also has the potential to attract long-term investors who value consistent dividend performance. Additionally, financial constraints may prompt firms to choose dividend smoothing or stable dividends. This decision is driven by the aim of attracting and retaining investors who rely on a predictable income stream, as opposed to making sporadic changes in dividend policies based on short-term earnings fluctuations.

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CHAPTER FIVE: Summary and Conclusions

5.0 Introduction

This chapter presents a comprehensive summary and conclusion for the thesis. It encompasses a discussion on the limitations of the research, explores policy implications, and furnishes recommendations for future studies in the realm of dividend policy. Section 5.1 encapsulates a summary of the thesis and outlines the principal findings derived from the analysis. In Section 5.2, the focus shifts to an examination of the limitations inherent in the research. Subsequently, Section 5.3 delves into the implications arising from the study's outcomes. Lastly, Section 5.4 presents forward-looking recommendations to guide future research endeavours in the field of dividend policy.

5.1 Summary of Findings

5.1.1 Chapter 2 – Comprehensive analysis of institutional determinants: How investor protection, press freedom, property rights, financial development, and corruption shape dividend policy in African firms

This chapter provides a comprehensive analysis of institutional determinants influencing dividend policy in African-listed firms, addressing a topic of enduring interest to scholars and industry experts. Despite extensive theoretical and empirical research, the reasons behind firms' dividend decisions remain elusive, particularly within the African context where institutional factors have been less explored. Spanning from 2006 to 2020, this study introduces innovative variables such as press freedom and financial development as critical determinants of dividend policy. It adopts a multi-country perspective, examining 357 non-financial listed firms across thirteen African stock markets, ensuring a comprehensive analysis that transcends individual countries and regional studies. Methodologically, the research employs a dynamic panel model and the system GMM approach for robust estimation.

The study's findings confirm the hypothesized adverse impact of investor protection on the dividend policy of African firms, aligning with La Porta et al., (2000)'s substitute model. It reveals that investor protection and dividends serve as substitutes in mitigating agency conflicts. Firms in regions with weaker investor protection tend to offer higher dividends as a substitute for inadequate protection, whereas those in stronger investor protection environments exhibit lower dividend payouts (Athari et al., 2016; Chae et al., 2009; Jiraporn and Ning, 2006; John et al., 2015). Additionally, robust investor protection encourages shareholders to prefer retained earnings for growth and risk mitigation rather than higher dividend distributions. Moreover, the study highlights a positive correlation between financial development and dividend policy in Africa. Developed financial markets contribute significantly to increased dividend payouts by reducing capital costs

(Bekaert and Harvey, 2003; Makina and Negash, 2005). This reduction in costs mitigates agency conflicts and information asymmetry, thereby enhancing profitability and driving higher dividend payments. Furthermore, the evolution of financial markets facilitates increased investments and serves as an indicator of fiscal stability and growth prospects, attracting heightened investor interest.

Interestingly, corruption shows no significant influence on dividend policy in African firms, suggesting that corruption may not directly impact firm performance or dividend distribution decisions (Van Vu et al., 2018; Lavallée and Roubaud, 2011). This finding contrasts with the results obtained by Yensu and Adusei (2016) who show a negative relationship between corruption and dividend policy, potentially due to differing corruption measurement methodologies (Bohara et al., 2004; Brown et al., 2013). The study employs the World Bank's Control of Corruption Index, considered comprehensive, to examine these relationships.

Press freedom emerges as a significant positive factor influencing dividend policy, with higher press freedom associated with increased dividend payouts. Independent press reduces finance costs, stimulates investment and growth (Alam and Ali Shah, 2013; Dutta and Roy, 2011), enhances transparency, diminishes information asymmetry (Dutta and Roy, 2016; Kalenborn and Lessmann, 2013), and curbs agency costs (Almaskati et al., 2020). Companies operating under robust press freedom are more likely to adopt enhanced corporate governance practices, thereby positively affecting dividend policy. Contrarily, the study finds that property rights do not significantly influence dividend policy in African firms, contradicting prior research suggesting a positive correlation between stronger property rights and increased dividend payouts. This result may be due to varying influences of property rights across countries or overshadowing effects of other institutional variables such as investor protection and financial development on dividend policy.

Furthermore, the impact of financial market development is positive on dividend policy, while the development of financial institutions shows no substantial influence. Developed financial markets enhance financial performance, value (Almaskati et al., 2020), and corporate governance through information dissemination via stock markets (Levine, 1997; Ho, 2019). However, the study's findings regarding financial institutions diverge from prior studies suggesting a positive link with dividends, possibly due to African firms' reliance on diverse funding sources and varying levels of institutional development across countries. Robustness checks using alternative dividend policy measures reaffirm the primary findings, underscoring the role of institutional determinants of investor protection, financial development, and press freedom in shaping dividend policy across African firms. This robustness ensures confidence in the model's findings without compromising on specification issues.

In summary, this study demonstrates that dividend policy in African-listed firms is significantly influenced by institutional factors such as investor protection, financial development, and press freedom. Corruption and property rights protection show a limited impact on dividend policy. The findings contribute significantly to the empirical literature on dividend policy in Africa, offering insights into institutional determinants and adopting a multi-country perspective. Policymakers can utilize these insights to enhance corporate financial strategies, bolster investor confidence, and foster sustainable economic development across the African continent.

5.1.2 Chapter 3 -Innovation, dividend policy, and institutional development

The interplay between innovation and dividend policy has been extensively researched and debated in corporate finance and management. However, both theoretical frameworks and empirical evidence present conflicting results regarding the relationship between innovation and dividend policy (Hasan et al., 2022). Despite voluminous research in developed markets (e.g., Boumosleh and Cline, 2015; Fama & French, 2001; Gugler, 2003; Lahiri and Chakraborty, 2014; Lasfer, 2002; Lee and Lee, 2019), relatively few studies have explored this relationship in the African context (Hasan et al., 2022). Recent empirical research has highlighted the nuanced role of institutional factors in shaping the innovation-dividend policy relationship, particularly in BRICS countries (Hasan et al., 2022). However, understanding of how institutional factors moderate this relationship in emerging markets remains limited, highlighting a critical gap in the literature (Yang et al., 2020).

This chapter delves into the intricate relationship between innovation and dividend policy in African firms, focusing on how institutional factors influence this dynamic. The study addresses two fundamental questions: 1) What is the nature of the relationship between innovation and dividend policy? and 2) How does the strength of this relationship vary based on institutional quality? It encompasses 260 non-financial firms from six African countries (Egypt, Kenya, South Africa, Morocco, Tunisia, and Zambia), specifically targeting the largest stock markets on the continent. Employing System GMM estimation, the study aims to investigate how firm innovation interacts with dividend policy and explore the influence of institutional factors in shaping this interaction.

The findings reveal a statistically significant negative relationship between innovation and dividend policy in African firms. Firms that prioritize innovation tend to distribute fewer dividends, indicating a trade-off between investing in innovation and paying dividends. This aligns with previous research and theoretical frameworks such as the residual theory of dividends and the pecking order theory, which suggest that firms prefer to use internal funds, like retained earnings, for innovative projects rather than distributing them as dividends (Boumosleh and Cline, 2015; Fama and French,

2001; Gugler, 2003; Lee and Lee, 2019; Hasan et al., 2022). Several theories help explain these findings. According to the residual theory of dividends, firms first invest in projects with positive net present values (NPV), such as innovation, before distributing dividends to shareholders. Similarly, the pecking order theory posits that firms prefer internal financing over external financing, prioritizing retained earnings for investments when profitable opportunities arise. Moreover, firms may adjust dividend policies to maintain adequate funds for innovation projects, thereby smoothing R&D expenditures and minimizing associated capital costs.

The study's robustness is confirmed through alternative measures of dividend payout, various model specifications, and innovation metrics, consistently reinforcing the negative relationship between innovation and dividend policy. This negative correlation may also reflect the challenges and inefficiencies present in Africa's innovation landscape, exacerbated by weak institutional environments. In summary, the research underscores the delicate balancing act African firms face in allocating resources between innovation and dividends. The observed negative relationship suggests strategic decisions by firms to prioritize long-term growth through innovation, thereby influencing their dividend distribution policies. Institutional factors further complicate this relationship, emphasizing the need for nuanced understanding in African business contexts.

Moreover, the study investigates how institutional development influences the relationship between innovation and dividend policy in African firms. It explores the impact of investor protection, financial market development, the rule of law, government effectiveness, and control of corruption on this dynamic. The findings reveal significant heterogeneity in the relationship between innovation and dividend policy, contingent upon institutional development. Weaker institutional frameworks characterized by limited investor protection, underdeveloped financial markets, weak rule of law, low governance effectiveness, and high corruption intensify the negative impact of innovation on dividend policy. In such environments, firms often face trade-offs between investing in innovation and paying dividends, leading to a substitution effect. Conversely, stronger institutional environments mitigate this negative association, allowing firms to balance investments in innovation with dividend distributions more effectively (Hasan et al., 2021).

Weak investor protection exacerbates the negative relationship between innovation and dividend policy, while stronger investor protection helps alleviate it (Hasan et al., 2021). Similarly, underdeveloped financial markets intensify the negative impact of innovation on dividends, whereas developed financial markets provide sufficient capital for innovation, reducing the necessity to reduce dividends (Brown et al., 2013; Cecchetti and Kharroubi, 2012; Arcand et al., 2015). The role of the

rule of law is crucial, with stronger legal institutions supporting higher R&D intensity and reducing the trade-off between innovation and dividend policy (Alam et al., 2018; Canh et al., 2019).

Moreover, weak government effectiveness and high corruption amplify the negative relationship between innovation and dividend policy, reflecting uncertainties and challenges in these environments (Alam et al., 2018; Canh et al., 2019). Stronger government effectiveness provides a stable business environment, potentially supporting a positive effect of innovation on dividends.

In summary, the study confirms that institutional development significantly shapes the interaction between innovation and dividend policy in African firms. Weak institutional environments exacerbate the negative impact of innovation on dividend distributions, while stronger institutional frameworks mitigate this effect. These findings underscore the importance of institutional contexts in understanding corporate financial policies in Africa, offering insights for policymakers and stakeholders aiming to foster sustainable economic growth and innovation

5.1.3 Chapter 4 -Institutional determinants of dividend smoothing.

The chapter investigates dividend smoothing, a relatively underexplored aspect of dividend policy, focusing on African-listed firms. The study aims to unravel the dividend smoothing puzzle by examining institutional determinants and their impact on the SOA toward the target dividend payout. Spanning from 2006 to 2020, the dataset integrates country-level variables from the World Bank's Governance Indicators database and annual reports on press freedom. The sample includes 202 non-financial listed firms across seven African stock markets. Employing system GMM to estimate the dynamic panel model, the results show that African firms have a speed of adjustment (SOA) of 0.539, indicating a moderate level of dividend smoothing, and a target payout ratio of 0.484, suggesting they pay out a high percentage of their earnings as dividends.

The findings reveal significant insights into how institutional contexts shape dividend smoothing behaviours in African-listed firms. Civil law countries exhibit a lower SOA compared to common law jurisdictions, indicating that firms in civil law environments engage more in dividend smoothing practices, potentially to compensate for weaker governance mechanisms (Koussis and Makrominas, 2019; Javakhadze et al., 2014). This underscores the role of legal frameworks in influencing financial policies aimed at mitigating risks associated with inadequate investor protection and regulatory oversight. Moreover, firms operating in low-income countries demonstrate a lower SOA compared to their high-income counterparts (0.637), suggesting a higher reliance on dividend smoothing strategies. This aligns with agency theory, where firms in economically challenged environments utilize stable dividend policies to align shareholder-manager interests amidst high

agency costs and limited investor awareness (Al-Malkawi et al., 2014; Javakhadze et al., 2016). Additionally, lower GDP and economic growth correspond to underdeveloped financial markets and heightened information asymmetry, further necessitating dividend smoothing as a tool to manage uncertainties and maintain investor confidence (Bebchuk and Neeman, 2010).

Furthermore, weak investor protection correlates with increased dividend smoothing, reflecting heightened agency conflicts and the need for stable dividend payouts to bolster investor trust (Al-Malkawi et al., 2014; Javakhadze et al., 2016). This is consistent with agency cost theory, where weaker shareholder rights prompt firms to adopt conservative financial policies to mitigate potential abuses by management and external stakeholders. Surprisingly, the study finds that firms in less financially developed environments, characterized by weak financial institutions, engage more in dividend smoothing. This supports theories of agency costs and information asymmetry, suggesting that firms in such settings face challenges in transparency and governance, necessitating stable dividend policies to signal financial stability and manage agency problems (Desai et al., 2007). Additionally, environments with restricted press freedom are associated with higher levels of dividend smoothing, as firms seek to mitigate information asymmetry and enhance investor confidence amidst limited media scrutiny (Dutta and Roy, 2016; Kalenborn and Lessmann, 2013). Conversely, higher press freedom correlates with stronger governance and monitoring mechanisms, reducing the need for dividend smoothing as firms operate in more transparent environments (Almaskati et al., 2020; Bednar et al., 2012).

Moreover, weak property rights and high corruption environments lead to increased dividend smoothing, as firms navigate risks of expropriation and high agency costs associated with weak governance frameworks (Estrin and Prevezer, 2011; Ghoul et al., 2017). This underscores the role of institutional quality in shaping dividend policy decisions and operational strategies in African contexts. Lastly, countries with low control of corruption and weak governance effectiveness are associated with more dividend smoothing, aligning with theories of agency costs and information asymmetry (Leary & Michaely, 2011). In such environments, dividend smoothing serves as a strategic tool to signal financial stability and mitigate investor concerns about potential mismanagement or financial misconduct.

In summary, the study highlights that institutional factors significantly influence dividend smoothing behaviours in African-listed firms. Weak governance, low investor protection, restricted press freedom, underdeveloped financial markets, civil law jurisdictions, low economic growth, high corruption, and weak property rights collectively shape firms' dividend policy decisions and their

Speed of Adjustment (SOA) toward target payouts. These insights provide a nuanced understanding of how institutional contexts in Africa impact corporate financial strategies, offering valuable implications for policymakers, investors, and stakeholders aiming to foster sustainable economic growth and stability in the region.

The findings consistently support the agency and information asymmetry models of dividend smoothing in African firms. Firms in Africa, facing varying institutional challenges, tend to adopt conservative dividend policies characterized by low SOA. This strategic choice ensures stable dividend payouts irrespective of short-term earnings fluctuations, aiming to bolster investor confidence and signal financial robustness amidst institutional weaknesses. Moreover, in environments marked by weak institutions, firms prefer stable dividend policies to mitigate risks associated with governance deficiencies and economic uncertainties. This approach not only signifies reliability but also attracts long-term investors seeking consistent dividend performance amid volatile market conditions. Additionally, financial constraints in underdeveloped financial markets prompt firms to prioritize dividend stability, ensuring predictable income streams for investors and supporting sustained shareholder loyalty. These findings underscore the adaptive strategies of African firms amidst institutional constraints, demonstrating how dividend smoothing serves as a risk management tool in navigating complex institutional environments. By aligning dividend policies with institutional realities, African firms strive to maintain financial stability, enhance investor trust, and sustain long-term growth prospects despite prevailing challenges.

5.2 Limitations of the study

5.2.1 Chapter 2 – Comprehensive analysis of institutional determinants: How investor protection, press freedom, property rights, financial development, and corruption shape dividend policy in African firms

The research on the comprehensive analysis of institutional determinants—how investor protection, press freedom, property rights, financial development, and corruption shape dividend policy in African firms confronts several inherent limitations beyond the researcher's control. These limitations are particularly relevant given the context of African firms. Firstly, the reliance on data from sources such as Bloomberg, the World Bank, the IMF, and Press Freedom House introduces potential inaccuracies, incompleteness, and inconsistencies that may compromise the reliability of the findings. For example, data collection and reporting standards vary significantly across African countries, leading to potential discrepancies and gaps. These challenges emerged during the research process, including issues of missing data and inconsistencies, which are more pronounced in regions with less developed data infrastructure. Secondly, the selected timeframe from 2006 to 2020, while practical, may not encapsulate the full spectrum of changes in institutional factors, given their

dynamic nature. Institutional factors such as governance quality, investor protection, and press freedom can evolve rapidly due to political changes, economic reforms, or social movements. In the African context, where many countries have experienced significant political and economic transitions within short periods, the timeframe may miss out on capturing critical shifts that influence dividend policy.

Additionally, Africa's inherent diversity poses a challenge in representing cross-country differences, potentially leading to a biased sample with overrepresentation of certain nations. For instance, the economic and institutional environments in South Africa and Nigeria differ markedly from those in smaller or less economically developed nations like Zambia or Tunisia. This diversity complicates the analysis, as it requires a nuanced understanding of how varying levels of institutional development impact dividend policies across different African contexts. Furthermore, assuming homogeneity across nations may oversimplify the intricate nature of their institutional environments, potentially resulting in a lack of nuance in understanding the diverse influences on dividend policy. African countries exhibit a wide range of institutional qualities and economic conditions, from highly developed financial markets in South Africa to emerging markets in Kenya and Egypt. This diversity means that institutional determinants of dividend policy cannot be uniformly applied across all African countries without losing critical contextual differences.

These limitations underscore the complexity of the research domain and the challenges inherent in conducting empirical studies on institutional determinants of dividend policy within the African context. They highlight the need for more granular, country-specific analyses that can better capture the unique institutional landscapes of individual African nations. Addressing these limitations in future research could provide a more detailed and accurate understanding of how institutional factors shape dividend policies in different African settings, ultimately contributing to more effective policy-making and corporate governance strategies in the region.

5.2.2 Chapter 3-Innovation, dividend policy and institutional development

While this study on innovation, dividend policy, and institutional development in African firms yields valuable insights, it is crucial to recognize certain inherent limitations that lie beyond our control. Firstly, unobserved variables may exert potential influence on both innovation and dividend policy, introducing a source of uncertainty that cannot be fully mitigated. For example, cultural factors, management practices, or informal sector activities, which are prevalent in many African countries, could affect both innovation efforts and dividend decisions but are difficult to quantify and include in the analysis.

Secondly, the reliance on patents as the exclusive measure of innovation may inadvertently oversimplify the spectrum of innovative activities, particularly in sectors where patents hold lesser relevance. In many African contexts, innovation might be more focused on process improvements, frugal innovations, or informal sector innovations that are not typically captured by patent data. This reliance on patents could thus underestimate the true extent and nature of innovation occurring in African firms.

Thirdly, the choice of focusing on six African countries Egypt, Kenya, South Africa, Morocco, Tunisia, and Zambia may inadvertently limit the generalizability of our findings to other regions or types of firms. The institutional environments within Africa are highly heterogeneous, with significant differences in legal systems, governance quality, market development, and economic conditions. As a result, findings from these six countries might not fully represent the diverse institutional landscapes across the continent. Additionally, the selected timeframe of 2006 to 2020 may not fully encapsulate the evolving dynamics of innovation and its impact on dividend policy over a more extended period. African economies and their institutional frameworks have undergone significant changes, and a longer timeframe could capture more of these shifts. However, this aspect is beyond the control of the study due to data availability and consistency constraints.

The complexity of institutional development, coupled with the necessity to drop certain indicators due to multicollinearity concerns, underscores the challenge of fully grasping the intricacies of institutional environments. For instance, indicators like political stability, regulatory quality, and corruption control often interrelate, making it difficult to isolate their impacts on innovation and dividend policy. Dropping these indicators might result in a loss of nuanced understanding of how specific institutional factors interact to influence corporate behaviour in Africa.

Despite these limitations, our study contributes valuable insights within the confines of these acknowledged constraints. It highlights the significant role that institutional factors play in shaping the relationship between innovation and dividend policy in African firms, providing a foundation for future research to build upon and address these limitations. This understanding is crucial for policymakers, investors, and corporate managers aiming to foster a supportive environment for innovation and balanced corporate financial strategies in Africa.

5.2.3 Chapter 4-Institutional determinants of dividend smoothing

While this study on the determinants of dividend smoothing in African non-financial listed firms is a significant contribution to the field, it is important to acknowledge several limitations that may affect the interpretation of our findings. One notable limitation is the variability in data reliability and accuracy sourced from platforms like Bloomberg and the World Bank across African countries. This variance could introduce inconsistencies and missing data, impacting the robustness of our conclusions. African countries often face challenges related to data collection and reporting standards, which can vary significantly across the continent. This disparity in data quality and completeness may affect the reliability of our analysis and the generalizability of the findings. Additionally, the generalizability of our findings may be restricted to non-financial listed firms in Africa, as we focused solely on this subset of companies. The behavior and financial policies of non-financial firms might differ from those in the financial sector or unlisted companies, limiting the applicability of our results to the broader corporate landscape in Africa. For instance, financial firms have different regulatory requirements and capital structures that might influence their dividend policies differently.

Furthermore, the study's timeframe from 2006 to 2020 might not fully capture the evolving economic conditions and regulatory environments in the region, which are external factors that lie beyond the control of the study. The African continent has seen significant political and economic transformations during this period, including changes in governance, regulatory reforms, and shifts in economic policies. A longer or more recent timeframe might capture these dynamic changes more comprehensively, providing a fuller picture of how these factors influence dividend smoothing. Finally, despite efforts to account for relevant variables, the possibility of omitted variables and other unobserved factors influencing dividend smoothing cannot be entirely ruled out, adding another layer of complexity to the analysis presented here. Factors such as cultural influences, informal financial practices, and firm-specific management strategies, which are difficult to quantify and include in the study, might also play a significant role in shaping dividend policies in African firms.

Despite these limitations, our study provides valuable insights into the determinants of dividend smoothing in African non-financial listed firms. It highlights the significant role of institutional factors such as investor protection, press freedom, property rights, financial development, and corruption in shaping corporate financial policies. Understanding these influences is crucial for policymakers, investors, and corporate managers aiming to foster a supportive environment for sustainable economic growth and financial stability in Africa. Future research should consider addressing these limitations by incorporating more comprehensive data, extending the

timeframe of analysis, and exploring additional variables that may impact dividend smoothing behaviours in different African contexts.

5.3 Implications of the study

5.3.1 Chapter 2 – Comprehensive analysis of institutional determinants: How investor protection, press freedom, property rights, financial development, and corruption shape dividend policy in African firms

The findings of this study on the comprehensive analysis of institutional determinants—specifically, how investor protection, press freedom, property rights, financial development, and corruption shape dividend policy in African firms—have several important implications relevant to the African context. The overarching discovery underscores the pivotal role of institutional factors in shaping dividend strategies, highlighting the necessity for a comprehensive understanding of the institutional landscape when analysing dividend decisions in Africa.

The negative correlation between investor protection strength and dividend policy suggests that firms in weaker environments may use dividends to compensate for weak shareholder protection, aligning with La Porta's substitute model. For African policymakers, this implies the need to reinforce investor protection measures to encourage firms to rely on alternative value creation strategies, thereby safeguarding investor interests while recognizing diverse company approaches to dividend policies. In regions with weaker investor protection, educating investors about alternative value creation strategies could foster an environment where firms can confidently explore various means of value creation beyond high dividends. Recognizing the diverse impact of investor protection, African policymakers could tailor regulations to accommodate varying levels of investor protection, avoiding a one-size-fits-all approach.

The positive connection between financial development and dividend policy indicates that as financial systems in African countries become more developed, firms may adopt certain dividend strategies. Therefore, African policymakers should prioritize initiatives that foster a robust financial system, including enhancing market and institutional components and recognizing the positive impact of financial market development on dividend policy. Efforts should concentrate on improving market transparency, liquidity, and accessibility to create an environment conducive to positive dividend policy outcomes. The study's finding of an insignificant effect of financial institution development on dividend policy suggests the importance of reassessing existing policies and encouraging the diversification of financial instruments. Overall, African policymakers ought to strive for a balanced approach to optimize the impact of financial development on corporate dividend policies.

The study highlights a positive relationship between press freedom and dividend policy, revealing that companies in environments with greater press freedom tend to exhibit distinct dividend policies. This correlation suggests that increased transparency and accountability in such environments contribute to unique financial decisions. Therefore, African policymakers should prioritize initiatives to enhance and protect press freedom, recognising its crucial role in shaping corporate financial strategies. Supporting a free and independent media environment can foster transparency and accountability, positively influencing corporate dividend policies. Policymakers are encouraged to facilitate the flow of accurate and timely information through the press to create a well-informed investor base. Policies promoting press freedom are seen as contributing to a more transparent and informed market, potentially leading to more favourable dividend policies.

Furthermore, the positive relationship between press freedom and dividend policy underscores the role of media in promoting good corporate governance. African policymakers should focus on initiatives that strengthen corporate governance practices, including disclosure requirements and transparency standards. Addressing information asymmetry between companies and investors is crucial, with press freedom playing a role in reducing such asymmetry by providing independent analysis and reporting. Initiatives to educate both companies and investors about the impact of press freedom on dividend policy are recommended to enhance understanding and cooperation among stakeholders. Policymakers should also monitor, and address issues related to media integrity, maintaining the credibility of information and positively impacting its influence on corporate dividend policies. The study further suggests exploring global comparisons and benchmarks to assess the impact of press freedom on dividend policies across different jurisdictions. Learning from successful practices in regions where press freedom positively influences financial decisions can inform the development of effective policies. In conclusion, the study advocates for policies supporting a free and independent press, emphasizing that such initiatives can contribute to a more transparent and investor-friendly environment, ultimately promoting favourable dividend policies in the African corporate sector.

The study reveals non-significant impacts of GDP per capita, corruption, and property rights protection on the dividend policies of African-listed firms, challenging conventional assumptions and emphasizing the unique nature of the African context. This implies that factors influencing dividend decisions in Africa extend beyond typical economic and governance indicators. Policymakers are urged to recognize the multifaceted nature of dividend policy drivers and adopt flexible, tailored interventions based on individual firm characteristics. The lack of significant effects also suggests the potential importance of other economic, regulatory, or financial variables in shaping dividend

policies, warranting a broader scope of investigation. Although corruption and property rights protection did not significantly influence dividend policy, the study emphasizes the importance of strengthening corporate governance practices for transparency, accountability, and fair treatment of shareholders. African policymakers are advised to evaluate data quality and accuracy, considering reliable and comprehensive sources. Shifting the focus to encouraging long-term value creation within firms is recommended, as macroeconomic indicators like GDP per capita may not directly impact dividend policy. Policymakers can engage in international comparisons to inform decisions and strategies based on successful practices in different contexts.

In conclusion, the study advocates for a nuanced and comprehensive approach to policymaking in Africa, acknowledging firm-specific factors and exploring alternative variables. This nuanced perspective is crucial for policymakers, investors, and researchers interested in understanding the intricate dynamics of dividend decisions in African countries, contributing valuable insights to the corporate finance literature.

5.3.2 Chapter 3-Innovation, dividend policy and institutional development

The study's outcomes carry significant implications for understanding the intricate connection between innovation and dividend policies in African nations, particularly within the context of institutional development. These key implications can inform policymakers, investors, and corporate managers in Africa on how to navigate the balance between promoting innovation and maintaining shareholder returns.

Firstly, the research underscores a noteworthy negative correlation between innovation and dividend policies in African countries, indicating that firms actively engaged in innovation tend to distribute fewer dividends. This aligns with established theories such as the pecking order and residual theory, suggesting that companies prioritize reinvesting in innovation for superior long-term growth prospects over immediate dividend payments. African policymakers should strive to balance encouraging innovation and ensuring attractive returns for shareholders through dividends. Understanding that the negative impact of innovation on dividend policy suggests a focus on long-term value creation over short-term dividend distributions is crucial. Policymakers can consider initiatives to incentivize and reward companies for strategic investments and innovations contributing to sustained growth. Transparent communication about the strategic rationale behind prioritizing innovation over dividends is essential to align shareholder expectations and foster an understanding of the firm's long-term goals.

Policymakers might explore policies that specifically incentivize innovation without compromising shareholder value. This could involve implementing tax incentives, research and development grants, or other measures encouraging firms to invest in innovation while ensuring shareholders are not disproportionately affected. Given the negative impact of innovation on dividend policy, African policymakers should review financial regulations to ensure flexibility in resource allocation by firms. An adaptive regulatory framework that accommodates the diverse financial strategies employed by innovative firms is recommended. Policymakers need to be vigilant about firm-specific factors influencing the relationship between innovation and dividend policy. Understanding how individual firms manage this interplay can inform targeted policy interventions.

Policymakers could explore international benchmarks and best practices to understand how other regions effectively manage the relationship between innovation and dividend policy. Learning from successful approaches in different contexts can provide valuable insights for shaping effective policies. In summary, the negative impact of innovation on dividend policies among African-listed firms calls for a nuanced and adaptive policy approach. Policymakers must consider the delicate balance between fostering innovation and ensuring shareholder returns, recognizing the diverse strategies firms may adopt.

The study's findings also reveal significant implications for policy considerations concerning the relationship between innovation and dividend policy, emphasizing the influence of institutional environments. Policymakers need to prioritize enhancing weak institutional settings by implementing reforms that improve investor protection, uphold the rule of law, enhance government effectiveness, and combat corruption. Strengthening institutional frameworks can mitigate the negative impact of innovation on dividend policies in such environments. Recognizing the moderating role of institutional development, policymakers are advised to tailor their strategies based on the strength of the institutional environment. In weaker settings, the focus should be on providing additional support and safeguards for innovative firms to protect shareholders adequately. Conversely, in stronger environments where the relationship between innovation and dividend policy is positive but insignificant, policymakers can create incentives for firms to balance innovation and shareholder returns.

To address the exacerbating effect of corruption, African policymakers should prioritize anti-corruption efforts, creating a transparent and fair business environment that encourages innovation without compromising shareholder interests. Collaboration on an international level to share best practices can inform effective policy decisions. Additionally, the study suggests that policymakers

play a role in educating investors about the nuanced relationship between innovation and dividend policy in different institutional contexts. Transparent communication can align investor expectations with financial realities. Policymakers should also consider initiatives to strengthen financial markets, improving transparency, liquidity, and accessibility to support innovation without unduly affecting dividend policy.

For managers, the findings advise a careful evaluation of the trade-off between investing in innovation and distributing dividends, particularly in weak institutional environments. In strong institutional environments, innovation can be viewed positively, encouraging a balanced resource allocation strategy between innovation and dividends. Investors operating in weak institutional environments are urged to consider the potential trade-off between innovation and dividend income. Understanding the impact of weak institutions on this relationship can guide investors in making informed decisions. Conversely, in strong institutional environments, innovation may be perceived as a positive signal, offering attractive investment opportunities.

In summary, the study underscores the importance of considering institutional environments when formulating policies related to innovation and dividend policy in Africa. Policymakers are encouraged to strengthen weak institutions, tailor policies to institutional contexts, and promote a balanced approach that encourages innovation while safeguarding shareholder interests in both strong and weak institutional environments

5.3.3 Chapter 4-Institutional determinants of dividend smoothing

The study underscores the susceptibility of dividend smoothing practices in African-listed firms to weak institutional environments, highlighting the need for targeted policy interventions. The findings suggest several policy implications that policymakers and regulatory bodies in Africa can consider fostering a more conducive environment for sustainable dividend policies.

Firstly, policymakers in civil law countries and low-income countries are encouraged to prioritize enhancing investor protection and property rights. This could involve implementing and enforcing regulations that safeguard investors' interests, reduce information asymmetry, and improve the overall business environment. Strengthening legal frameworks can potentially diminish the need for firms to resort to dividend smoothing strategies as a means of mitigating risks associated with weak governance mechanisms and inadequate investor protection.

Additionally, financially underdeveloped environments in Africa may benefit from policies aimed at bolstering financial institutions and markets. Initiatives focused on enhancing transparency, efficiency, and accessibility of financial systems can reduce the necessity for firms to engage in excessive dividend smoothing. By improving financial infrastructure, policymakers can create an environment where firms have better access to capital and are less reliant on dividend smoothing to manage financial uncertainties. Regions with low press freedom should consider initiatives to promote a free and independent press. Enhancing press freedom can contribute to reducing information asymmetry, as firms are more likely to disclose accurate and timely information to investors. This transparency can ultimately decrease the need for firms to engage in excessive dividend smoothing practices, as investors are better informed about corporate performance.

Furthermore, policymakers are urged to prioritize governance reforms to address concerns of misappropriation and weak regulatory oversight. Implementing measures to enhance corporate governance structures, strengthen regulatory frameworks, and increase transparency in corporate activities can mitigate the incentives for dividend smoothing practices. Efforts to combat corruption are also crucial, as weak governance effectiveness and high corruption levels are associated with increased dividend smoothing. Policymakers should focus on implementing and enforcing anti-corruption measures to foster a more conducive business environment where firms can operate with integrity and transparency. Policies aimed at promoting economic growth in Africa can indirectly contribute to reducing dividend smoothing. Supporting initiatives that foster economic growth, job creation, and income equality can lead to more stable business environments, thereby reducing the need for firms to engage in excessive dividend smoothing as a response to economic uncertainties. Improving regulatory quality and strengthening the rule of law are essential for creating a predictable and stable business environment in Africa. Policymakers should focus on developing and enforcing regulations that provide clarity and consistency, thereby reducing the incentives for firms to employ dividend smoothing strategies to navigate regulatory uncertainties. Lastly, policies that promote political stability can positively influence firms' dividend policies. Efforts to reduce political instability and create a conducive political environment can enhance investor confidence and reduce the likelihood of firms resorting to excessive dividend smoothing practices.

In summary, the policy implications involve a multi-faceted approach addressing legal frameworks, financial infrastructure, press freedom, governance, corruption, economic growth, regulatory quality, and political stability. Implementing these policies can contribute to creating an environment in Africa where firms are less inclined to engage in dividend smoothing practices, fostering sustainable corporate financial strategies aligned with long-term shareholder value creation.

5.4 Recommendations for further study

5.4.1 Chapter 2 – Comprehensive analysis of institutional determinants: How investor protection, press freedom, property rights, financial development, and corruption shape dividend policy in African firms

The study proposes the following recommendations for future research endeavours.

Future research on dividend policy and institutional determinants in African-listed firms should consider several avenues to deepen understanding and applicability. Extending the study timeframe beyond 2006-2020 could capture long-term impacts and evolving economic conditions, providing a more comprehensive analysis of how institutional factors shape dividend policies over different economic cycles. Sector-specific analyses could elucidate how institutional factors influence dividend policies across diverse industries within African economies, offering insights into sectoral nuances. Exploring potential mediating factors such as corporate governance practices, firm size, and industry competitiveness would provide a more nuanced understanding of the mechanisms through which institutional determinants affect dividend policy decisions. Additionally, investigating moderating factors like firm age, ownership structure, and market conditions could offer valuable insights into how these variables interact with institutional factors to influence dividend policy outcomes. Comparative studies across regions within Africa could highlight regional variations in institutional environments and their impact on dividend policies, contributing to a more nuanced understanding of regional dynamics. Advanced econometric techniques such as instrumental variables or propensity score matching could enhance causal inference, addressing potential biases arising from endogeneity in future studies. Integrating macro-finance factors such as interest rates, inflation, and exchange rates into analyses would provide insights into how broader economic factors interact with institutional determinants to influence dividend policy decisions. Moreover, utilizing measures like the International Country Risk Guide (ICRG) to assess institutional quality could deepen the analysis by incorporating comprehensive assessments of political, economic, and financial risks. A comparative study of how institutional factors operate within financial versus non-financial firms could yield valuable insights into sector-specific influences on dividend policy. Furthermore, exploring the effects of external shocks such as global economic crises, pandemics like COVID-19, or regional conflicts on the relationship between institutional determinants and dividend policy resilience could provide a comprehensive understanding of adaptive strategies in African corporate finance. These potential avenues for future research aim to enrich our understanding of the intricate interplay between institutional determinants and dividend policy in African-listed firms, informing policy and investment decisions across the continent.

5.4.2 Chapter 3-Innovation, dividend policy and institutional development

The study suggests several avenues for future research that are pertinent to advancing the understanding of the innovation-dividend policy relationship within African contexts. Firstly, a comparative analysis across industries could examine how the relationship between innovation and dividend policy varies within different sectors of the non-financial industry in Africa. Certain sectors might exhibit greater reliance on innovation for growth and less on dividend distribution. Conducting qualitative studies, such as interviews or case studies, could provide a deeper understanding of how managers perceive the trade-off between innovation and dividend policy in different institutional environments across Africa. Further research may explore the influence of cultural factors on the innovation-dividend policy relationship. Cultural attitudes toward risk-taking, long-term planning, and shareholder value may contribute to significant variations in this relationship across African markets. Expanding the study to include a broader global comparison, encompassing both developed and emerging markets, could provide insights into whether the observed relationship is specific to African markets or a more general phenomenon. Future research can also utilise alternative measures of innovation beyond patent applications to capture different aspects of innovative activities, such as research and development (R&D) expenditures or innovation indices. Lastly, exploring the behaviour of cross-listed firms operating in African markets and how these firms, subject to different institutional environments, manage the trade-off between innovation and dividend policy could provide valuable insights into the strategic choices firms make in diverse regulatory and economic contexts. These avenues for future research aim to enhance the comprehension of complex dynamics shaping corporate financial strategies in African economies, informing both academic inquiry and practical policymaking.

5.4.3 Chapter 4-Institutional determinants of dividend smoothing

Future studies focusing on determinants of dividend smoothing in Africa can significantly benefit from extending the time period beyond 2020 to capture evolving trends and changes in dividend smoothing practices among non-financial firms operating in African markets. This longitudinal approach would provide a more thorough understanding of how these practices adapt to shifting economic and regulatory landscapes within the region. Additionally, broadening the geographical scope to include more countries and sectors within Africa would offer a more nuanced perspective on how institutional factors influence dividend smoothing across diverse contexts. Comparative analyses between non-financial and financial sectors within the same countries could reveal sector-specific sensitivities to institutional determinants, highlighting variations in dividend policy responses. Moreover, exploring behavioural aspects through qualitative methods like interviews and case studies could illuminate the psychological motivations driving dividend

smoothing decisions among corporate managers and stakeholders. Qualitative research can provide deeper insights into the strategic considerations and internal dynamics influencing dividend policies. Quantitative techniques such as quantile regression could further enhance insights by examining how institutional determinants affect dividend smoothing across different levels of the dividend payout distribution. This approach would help identify whether certain institutional factors have varying impacts on dividend policies at different quantiles, providing a more nuanced understanding of the heterogeneous effects within African markets. Additionally, employing Markov Chain analysis could quantify the speed and persistence of transitions between different dividend payout levels, further deepening our understanding of the dynamics of dividend policies in African markets. These methodological approaches collectively offer robust frameworks to comprehensively explore the determinants of dividend smoothing in the African context, contributing to a more nuanced understanding of corporate financial strategies in emerging markets.

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