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OF  
LUSAKA**

**SCHOOL OF POSTGRADUATE STUDIES**

**INITIAL PUBLIC OFFERING PERFORMANCE ON THE LUSAKA  
SECURITIES EXCHANGE: ASSESSING LONG TERM OUTCOMES  
AND MARKET EFFICIENCY**

**A DISSERTATION SUBMITTED TO THE SCHOOL OF  
POSTGRADUATE STUDIES, UNIVERSITY OF LUSAKA IN PARTIAL  
FULFILLMENT OF THE AWARD OF THE MASTER OF BUSINESS  
ADMINISTRATION IN FINANCE**

**BY**

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## DECLARATION

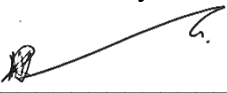
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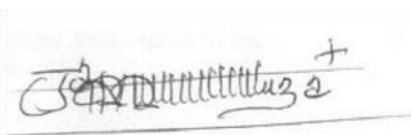
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## **DEDICATION**

To my family and friends, your love and support during my academic journey have provided strength and encouragement. Thank you for believing in me and pushing me to preserve and pursue my academic dreams.

Always there to provide a listening ear, advice, and motivation at times of doubt.

This work is a reflection of your belief and support, for which I am forever grateful.

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## LIST OF ACRONYMS

<b>Abbreviation</b>	<b>Definition</b>
IPO	initial Public Offering
LUSE	Lusaka Securities Exchange
CAR	Cumulative Abnormal Returns
BHAR	Buy and Hold Abnormal Returns
MABHAR	Mean Adjusted Buy and Hold Abnormal Returns
AR	Abnormal Returns
EMH	Efficient Market hypothesis
UK	United Kingdom
JSE	Johannesburg Stock Exchange
NSE	Nairobi Stock Exchange
GSE	Ghana Stock Exchange
SPSS	Statistical Package for Social Sciences

## **ABSTRACT**

This study examined the performance of Initial Public Offerings (IPOs) on the Lusaka Securities Exchange (LuSE) to better understand the dynamics of IPO pricing and performance in an emerging market. The research focused on the following key variables; Firm Size, Issue Size, Subscription Level, and Age of the Firm. The aim was to identify the factors that drive short-term under-pricing and long-term underperformance of IPOs on LuSE. Cumulative Abnormal Returns (CAR) and Buy-and-Hold Abnormal Returns (BHAR) was used to analyse IPO performance over different time periods. The study revealed significant under-pricing in the short term and underperformance in the long term. The results were consistent with trends observed in other emerging markets.

The findings indicated that market inefficiencies, information asymmetry, and investor behaviour played important roles in modelling IPO outcomes on LuSE. Despite the significance of firm-specific variables, the low explanatory power of the regression models (as evidenced by low R-squared values) suggested that factors like investor sentiment and speculative behaviour had a substantial effect on IPO long term performance, but were difficult to capture using conventional methods.

This research highlighted the need for regulatory reforms to improve market transparency, enforce better disclosure standards, and enhance investor education to mitigate speculative behaviour. Additionally, increasing institutional investor participation and strengthening corporate governance could significantly improve the efficiency and stability of the IPO market on LuSE.

The study concluded with practical recommendations, aimed at perfecting the IPO process and reducing inefficiencies in the market. Future research was recommended to explore the effects of macroeconomic factors, behavioural finance elements, and the role of institutional investors in the IPO markets of emerging economies.

## **CHAPTER ONE:**

### **BACKGROUND OF STUDY**

#### **1.1 INTRODUCTION**

The Lusaka Securities Exchange (LuSE) stands as an essential part of Zambia's financial market. LuSE plays an important role in the economic development of this country. The exchange, which was founded on the ideals of openness, accessibility and market integrity, is the major venue for Zambian companies looking to obtain funds through Initial Public Offerings (IPOs). IPOs, which convert privately held enterprises to publicly traded entities have a significant effect on Zambia's economy.

Zambia, like many emerging economies, relies on strong capital markets to support economic growth. These markets let organizations access finance resources for infrastructure, technology, and human capital investments. This capital injection functions as a growth catalyst, enabling corporations to expand their operations, develop new products or services, and create job opportunities. This virtuous cycle of growth leads to enhanced economic prosperity and stability.

In this procedure, IPOs on the LuSE are essential. They give firms access to a larger network of both domestic and foreign investors. In addition to gaining access to funding, many businesses improve their market awareness and reputation when they go public. Consequently, this can draw in additional funding, encourage creativity, and support entrepreneurship.

IPOs have far-reaching consequences for both firms and stockholders. An IPO provides an opportunity for early investors and founders to realize the value of their investments. It allows them to liquidate some of their holdings, diversify their portfolios, or invest in new initiatives.

Furthermore, IPOs provide opportunities for a wider range of investors, including institutional and individual investors. These investors, both domestic and international, look for ways to participate in the growth of emerging countries like Zambia. IPOs allow them to be a part of this journey and contribute to the building of shareholder value.

An Initial Public Offering (IPO) is the public sale of shares by a privately held firm in order to raise additional capital for business expansion and growth. This shift from a

private corporation to a publicly traded firm enables its shares to be traded. Because of its potential impact on financial markets and the economy, the LuSE IPOs have attracted substantial attention from investors and experts, as have other IPOs throughout the world.

Several factors motivate private companies to file for an IPO on the LuSE, including the desire to raise large financial resources to support their growth and expansion goals. Stock performance, defined as the evaluation of share returns over time, is an important indicator for assessing the success and impact of IPOs.

According to studies in this field, initial public offerings (IPOs) frequently display particular traits as follows:

1. Short-term Under-pricing: Wachira (2012), Kiran & Phil (2011), Zulu (2009), and other researchers have noted repeatedly that initial public offerings (IPOs) are frequently under-priced in the short term. Initial investors may be drawn in by this under-pricing, but the issuing company may lose out on prospective value.
2. Long-term Underperformance: IPOs have demonstrated a propensity to perform poorly over the long term. This indicates that these companies' stock prices eventually fall short of investors' initial projections or benchmarks for market performance (Wairia, 2010; Alvarez & Gonzalez, 2001).

The liveliness of IPOs is critical to the Zambian capital market's health. Liquidity, market depth, and variety are promoted by a thriving initial public offering (IPO) market that draws both domestic and overseas investors. As a result, the market becomes more resilient and appealing to issuers and investors alike.

In order to completely understand how IPOs affect LuSE, a thorough analysis must be carried out. Corporate governance procedures, investor behaviour during IPO events, long-term stock performance, IPO pricing dynamics, and the financial health of IPO companies should all be included in such an assessment.

Evaluating the effectiveness and impact of Initial Public Offerings (IPOs) is heavily reliant on examining how well a company's shares perform over time, which is critical for understanding both short-term and long-term results. Using updated data and new testing, the authors of this study attempted to investigate long-term effects and market

efficiency. The study aims to fill gaps in existing studies by focusing on long-term performance and giving new insights into the elements that influence these results.

Because of variations in investor behaviour, market maturity, and regulatory frameworks, initial public offerings (IPOs) in developing nations like Zambia offer a distinct viewpoint when compared to developed ones. It is essential to comprehend IPO success in different settings in order to modify financial theories and practices to meet the unique opportunities and difficulties of these markets.

### **1.1.1 Lusaka Securities Exchange**

The Lusaka Securities Exchange Plc (LuSE) was established with preparatory technical assistance from the International Finance Corporation (IFC) and the World Bank in 1993. The Exchange opened on 21st February 1994. The formation of the Exchange was part of the government's economic reform program aimed at developing the financial and capital market in order to support and enhance private sector initiative. With it being the principal stock exchange in Zambia, it has been legally mandated with the operation of a securities exchange for dealing in shares, bonds, and other securities by the Securities Act No. 38 of 1993. (LuSE, 2019)

The Lusaka Securities Exchange Plc was also expected to attract foreign portfolio investment through recognition of Zambia and the region as an emerging capital market with potentially high investment returns. As part of the Zambian government's strategy for private sector reforms, these operations were anchored on the Privatization Act No 21 of 1992, which recognized the importance of citizens' participation in the growing economy. With the government seeking to privatize state owned companies, the Act sought to hold shares from these privatized state companies on behalf of Zambians for divestiture through the Zambia Privatization Trust Fund (ZPTF). This was primarily to maintain participation in the economy by citizens in the post-privatization era by empowering them through the ownership of shares. (LuSE, 2019). The LuSE activities are regulated by its own regulations and bylaws, along with the rules, orders and guidance of the Securities and Exchange Commission.

The establishment of LuSE in 1994 was a significant part of Zambia's broader economic reforms, aimed at supporting local businesses in raising long-term capital cost-effectively and attracting foreign investment to support local industries and

economic development. Despite being relatively new compared to more established global financial markets like the New York Stock Exchange or the London Stock Exchange, LuSE has experienced significant growth since its inception. The LuSE has 22 listed companies, with a total market capitalisation of approximately K98.7 billion as at year end 2023, which represented 10.93% of Zambia's GDP, demonstrating its continuous development and importance as a financial platform in Zambia. In addition, the Lusaka Securities exchange (LuSE) was named the most profitable stock exchange in Africa for 2021 and 2022 (Financial Insights, 2023).

### **1.1.2 Motivations for LuSE IPOs**

Companies on the LuSE opt for IPOs for a multitude of reasons:

**Capital Structure Optimization:** Aligning with the financial theories of Scott (1976) and Modigliani and Miller (1963), LuSE-listed companies may decide to go public to optimize their capital structure. The introduction of external equity through an IPO can potentially reduce the cost of capital, thereby enhancing the overall value of the firm.

**Insider Equity Liquidity:** IPOs on the LuSE provide an avenue for insiders, such as company founders and early investors, to realize the value of their holdings. This is in line with the rationale presented by Mello and Parsons (2000) and Zingales (1995), offering insiders the opportunity to monetize their investments.

**Venture Capitalist Exit Strategy:** Venture capitalists often leverage IPOs as an exit strategy, as suggested by Black and Gilson (1998). An IPO enables venture capitalists to effectively harvest their investments, contributing to the dynamism of the stock market.

**Facilitation of Takeover Activity:** IPOs can also facilitate takeover activity within the LuSE. This aligns with the argument made by Zingales (1995) that going public can serve as a preliminary step toward attracting acquisition interest at favourable terms, thereby impacting the corporate landscape of the exchange.

**Strategic Expansion:** IPOs may serve as a strategic manoeuvre to enhance a company's ownership base, as seen in the findings of Chemmanur and Fulghieri (1999). By increasing their shareholder base, companies can potentially bolster their visibility and reputation within the LuSE.

## 1.2 DEFINITION OF KEY TERMS

1. **Initial Public Offering (IPO):** The process where a private company becomes public by selling its shares to the general public for the first time.
2. **Long-Term Outcomes:** The results and trends observed in the performance of companies on the Lusaka Securities Exchange (LuSE) over an extended period following their IPOs.
3. **Market Efficiency:** The degree to which the LuSE operates optimally, ensuring that stock prices promptly reflect all available information, a critical aspect for evaluating the LuSE's functionality in the context of IPOs.
4. **Lusaka Securities Exchange (LuSE):** The primary stock exchange platform in Zambia where publicly-traded companies list their shares for trading, the specific focus of this study.
5. **Factors:** Multifaceted elements influencing the stock price performance of companies on the LuSE, including market dynamics, firm-specific attributes, investor behaviour, and regulatory frameworks.
6. **Investor Behaviour:** Actions, decisions, and trading patterns of participants within the LuSE, including their risk tolerance, trading strategies, and responses to market information.
7. **Regulatory Frameworks:** Established rules, policies, and regulations overseen by regulatory authorities governing the LuSE, encompassing IPO procedures, market integrity, and safeguards for investor protection.
8. **Market Dynamics:** The various forces and conditions within the LuSE, such as supply and demand, economic conditions, and investor sentiment that affect stock price movements and market behaviour.
9. **Mean Adjusted Buy and Hold Return (MABHAR):** This metric measures the average return on a stock over a specified period, adjusted for market performance.
10. **Buy and Hold Return (BHAR):** This metric measures the average return on a stock over a specified period.

11. **Abnormal Returns (AR):** AR refers to the difference between the actual return on a stock and the expected return, typically based on market performance.
12. **Cumulative Abnormal Returns (CAR):** CAR aggregates abnormal returns over a period to assess the overall impact on the stock's performance.

### **1.3 STATEMENT OF THE PROBLEM**

The LuSE plays an important role in Zambia's financial market by providing avenues for investment and potential capital appreciation. However, a critical issue persists regarding the sustained performance of Initial Public Offerings (IPOs).

Even while initial public offerings (IPOs) are sometimes seen as catalysts for development and growth, there is much doubt over their capacity to provide investors with steady, long-term profits. IPOs in comparable emerging nations, for instance, have shown a pattern of short-term under-pricing followed by long-term underperformance.

Loughran (1993) compared the returns of a portfolio of IPO firms' stocks with the Nasdaq index return. The results revealed an alarming underperformance of nearly -60%, emphasizing the nature of this phenomenon. Loughran and Ritter (1995) extended this observation to IPOs conducted from 1970 to 1990, revealing that they underperformed non-issuing firms of similar size by over -50% over a five-year horizon after the offering.

Previous studies have not comprehensively analysed the long-term outcomes of IPOs on LuSE. Furthermore, there is little research on specific aspects such as investor behaviour, market dynamics, and regulatory implications. This study aimed to investigate the long-term performance of IPOs on the LuSE in order to ascertain whether these patterns are applicable in the Zambian environment, taking into account aspects such as stagnant stock prices, a small number of listed companies, and restricted trading hours on the LuSE.

### **1.4 RESEARCH OBJECTIVES**

**General Objective:** To investigate the long-term performance and market efficiency of IPOs on the Lusaka Securities Exchange (LuSE)

### **Specific Objectives:**

1. To examine the long-term stock price performance of LuSE-listed corporations after their initial public offerings.
2. To Identify factors that affect long-term stock price movements after an IPO
3. To examine how market characteristics and investor behaviour affect the long-term performance of IPOs on the LuSE.

### **1.5 RESEARCH QUESTIONS**

1. How have companies listed on the LuSE performed in terms of their stock prices over the long run following an IPO?
2. After an initial public offering (IPO) on the LuSE, what factors influence long-term stock price performance?
3. How do investor behaviour and market conditions affect IPOs' long-term performance on the LuSE

### **1.6 HYPOTHESES**

- **Null Hypothesis (H0):** The stock prices of companies listed on the LuSE do not show a statistically significant change in the long term after an IPO.
- **Alternative Hypothesis (H1):** The stock prices of companies listed on the LuSE shows a statistically significant change in the long term after an IPO.

### **1.7 SIGNIFICANCE OF THE STUDY**

This study gave key insights into the long-term performance of LuSE-listed firms after their initial public offerings. This study sought to improve LuSE's understanding of market efficiency and transparency by investigating how stock values change over time. The findings are intended to help policymakers and regulators develop effective measures for stimulating long-term growth within LuSE and improving market confidence.

Furthermore, our study added to the existing body of knowledge on the effects of IPOs in emerging nations, with important implications for investors, businesses, and other stakeholders. The study's findings could be critical in directing policy formation or revisions to increase market efficiency and investor protection within the LuSE

framework, potentially serving as a model for other emerging economies experiencing comparable economic situations.

### **1.8 SCOPE OF THE STUDY**

This study looked at the long-term stock price performance of companies listed on the LuSE after their initial public offerings. The analysis covered the years 1994 to 2023, analysing stock price behaviour immediately after the IPO as well as at critical milestones like the fourth year. This time period was chosen because it represents a stable economic climate following economic reforms and there is a wealth of data available for research. The analysis includes all companies that filed IPOs during this time period, assuring a fair sample of IPO performance on the LuSE.

The study used data from LuSE records and financial reports to gain a full understanding of IPO performance. The chosen era corresponds to a period of economic stability and prosperity in Zambia, making it particularly relevant for evaluating IPO activity and long-term performance trends.

## **CHAPTER TWO**

### **LITERATURE REVIEW**

#### **2.1 INTRODUCTION**

The literature review is divided into sections with the aim of providing a full understanding of the factors influencing a company's long-term stock price performance following its Initial Public Offering. The first portion examined relevant theories that influence the individual variables fundamental to the research objectives, with a primary focus on stock price performance and IPOs. The following sections summarized the factors of stock price performance, presented empirical evidence from previous studies, and finished with a conceptual framework.

This chapter attempted to lay the groundwork for investigating the long-term stock performance of LuSE-listed companies' post-IPO by examining both theoretical and empirical studies. The assessment also revealed gaps in previous research, particularly in emerging countries such as Zambia, which this study sought to rectify.

#### **2.2 THEORETICAL FRAMEWORK**

This section outlined the main theories that support the investigation of market efficiency and IPO performance. Efficient Market Hypothesis (EMH), Information Asymmetry Theory, Signalling Theory, and Behavioural Finance Theory are among the theories that are covered. These theories served as the basis for analysing the long-term stock price behaviour of companies following their initial public offerings (IPOs) and for comprehending the LuSE's dynamics.

##### **2.2.1 EFFICIENT MARKET HYPOTHESIS (EMH)**

Markets price assets efficiently, according to the Efficient Market Hypothesis (EMH), which was put forth by Fama in 1970. However, the notable underperformance of initial public offerings (IPOs) over the long run reveals that there are deviations from semi-strong efficiency, which may be caused by a lack of transparency and liquidity. According to the Efficient Market Hypothesis (EMH), stock prices accurately reflect a fair value at any given moment by incorporating all relevant information.

Three types of EMH exist: Technical analysis and historical price movements are insufficient to forecast future stock prices, according to weak-form efficiency. Strong-form efficiency asserts that all information, both public and private, is included into

stock prices, whereas semi-strong form efficiency asserts that all information that is accessible to the public is reflected in stock prices.

To determine if the LuSE prices initial public offerings (IPOs) effectively over the long run, EMH is necessary. In the event that the LuSE follows the semi-strong form efficiency principle for example, IPO prices ought to take into account all publicly available data regarding the firm and its prospects for the market. The study looked at criteria like the size of the offer, firm size, subscription rate, and firm age to see if the market values initial public offerings (IPOs) efficiently.

A key component of these studies is stock market efficiency. According to Fama (1965), security prices are often near their expected levels in efficient markets. But in reality, the idea of market efficiency is not always true. Unusual returns were frequently the consequence of empirical evidence showing differences between IPO prices and their anticipated levels. According to these findings, markets—including the LuSE—might not always function effectively (Wairia, 2010; Tsangarakis, 2004).

### **2.2.2 INFORMATION ASYMMETRY THEORY**

The Information Asymmetry Theory investigates how IPO pricing and subsequent stock performance are affected by information gaps between insiders (firm management and underwriters) and outsiders (investors). The initial pricing of IPO shares is influenced by insiders' greater understanding of a company's prospects (Leland and Pyle, 1977). If insiders undervalue shares to maximize their profits, this knowledge advantage may result in mispricing and have an impact on stock performance after an initial public offering (IPO) (Baron, 1982).

This study evaluated the effectiveness of regulatory frameworks on the LuSE in mitigating information asymmetry and guaranteeing equitable pricing during initial public offerings (IPOs) by analysing its role. To determine how they affect information asymmetry and, in turn, IPO success, factors including firm size, firm age, and offer size were assessed.

### **2.2.3 SIGNALLING THEORY**

Signalling Theory proposes that organizations utilize specific behaviours, such as pricing tactics and offer size, to communicate their quality to the market. In the context of IPOs, companies can demonstrate their power by establishing specific offer sizes or pricing tactics, which can influence investor perceptions and stock performance

This theory was used to investigate how the size of the offer and firm size convey a firm's quality, as well as how these signals influence long-term stock performance. The study investigated if greater offers or company attributes result in better IPO outcomes on the LuSE.

#### **2.2.4 BEHAVIOURAL FINANCE THEORY**

The study of behavioural finance looks at how illogical behaviour and psychological biases affect financial judgments. Behavioural biases in investor mood can influence IPO pricing and performance, deviating from the EMH's rational expectations. This idea suggests that investors may be reasonable if they value profits more than preventing losses. Their decision making is often influenced by their expectations of gains

This theory helped explore the role of Subscription Rate in IPO performance. The study analysed how sentiment-driven demand influences initial pricing and long-term performance, particularly during periods of high optimism or pessimism.

Moreover, behavioural finance theory, provided insights into the behaviour of investors on the LuSE. This psychological aspect of investing significantly affect market dynamics and stock performance on the LuSE.

#### **2.2.5 WINNER'S CURSE HYPOTHESIS**

The Winner's Curse Hypothesis posits that investors in an IPO may end up paying too much for the stock due to over-enthusiasm, leading to post-IPO price corrections. This often occurs in markets with high uncertainty and information asymmetry.

The winner's curse occurs when the "winners" of an auction (in this case, IPO investors) overestimate the value of the stock, driven by speculative behaviour or overconfidence (Thaler, 1988). Investors bidding for shares may base their decisions on overoptimistic expectations, especially in emerging markets where information is scarce.

The theory is particularly relevant for under-priced IPOs, where early investors may win the auction, only to realize that the price they paid was too high once the stock starts trading on the open market.

On LuSE, where investor education may be limited and market information is often incomplete, the winner's curse is likely a key factor in initial price inflation and

subsequent underperformance. Speculative demand, driven by retail investors' desire for quick profits, leads to a rush of subscriptions that may result in an overvaluation of the shares.

For example, high subscription levels in IPOs (often a sign of strong initial demand) may cause price inflation, while in the long run, post-IPO corrections and underperformance can occur as the market realizes the stock was overpriced, consistent with the winner's curse.

## **2.3 EMPIRICAL LITERATURE**

Empirical studies provided insights into the actual performance of IPOs in different markets, offering evidence on the relationship between IPOs and long-term stock performance. Key empirical studies carried out both domestically and internationally were reviewed in this section, with an emphasis on their objectives, methodologies, results, and limitations.

### **2.3.1 Performance Assessment of IPOs**

The performance of IPOs in literature is often assessed using two major indicators

#### *2.3.1.1 Short-term Under-pricing:*

Studies by Tsangarakis (2004), Kiran and Phil (2011), and Wachira (2012) used initial mispricing to assess short-term under-pricing in IPOs. Initial mispricing provides insight into how stock prices of newly listed corporations on the stock exchange can depart from their underlying values shortly after going public.

#### *2.3.1.2 Long-term Performance:*

Long-term performance is measured by studying underperformance during the extended time following the IPO. This approach, in line with research conducted by Kooli and Suret (2002), Alvarez and Gonzalez (2001), and Wairia (2010), scrutinizes whether companies listed on stock exchanges continue to meet or exceed market expectations beyond their initial public offering.

#### *2.3.2 IPO Performance in the World Market*

Alvarez and Gonzalez (2001) explored the performance of IPOs in the Spanish capital market. The researchers conducted a longitudinal study, tracking the performance of IPO stocks over several years. Alvarez and Gonzalez reported a lack of significant underperformance in the Spanish capital market, suggesting that IPOs were fairly

priced at the time of listing. The study focused on a developed market, which may differ from the emerging market context of the LuSE.

With an emphasis on offer size, Loughran and Ritter (2002) examined the long-term performance of initial public offerings (IPOs) in the United States. The researchers investigated the performance of a sizable sample of initial public offerings (IPOs) across a five-year period. Because they are seen as less hazardous by investors, they discovered that larger offers typically had lower under-pricing and greater long-term success. The LuSE and other emerging markets, where distinct dynamics may be at work, were not the study's primary emphasis.

Tsangarakis (2004) sought to examine the Greek market's IPOs' long-term performance. Using an event research methodology, the study examined stock performance for three years following the initial public offering. According to the study, investors that kept IPO stocks for a predetermined amount of time saw a sizable increase in value. The study did point out, however, that these profits differed based on the market and industry. The study was restricted to the Greek market, which might have distinct features not found in other markets, like the LuSE.

Investor sentiment and IPO performance in the French market were studied by Derrien (2005). Derrien measured the market's mood and how it affected IPO pricing and long-term returns using sentiment indices. High investor sentiment, according to the study, causes overpricing, which lowers long-term profits. This research sheds light on the function of sentiment, but it ignores the ways in which it interacts with firm-specific characteristics like age or size of firm.

Georgen, Khurshed, and Mudambi (2007) examined how smaller businesses fared following their initial public offerings in the United Kingdom. The study analysed the performance of small and large company initial public offerings (IPOs) using a comparative methodology. In contrast to larger companies, smaller ones performed worse, suggesting that post-IPO results are influenced by a company's size. Since the UK market was the study's primary focus, the LuSE might not directly benefit from its conclusions.

### *2.3.3 IPO Performance in African Markets*

A rising body of scholarly research has focused on the performance of initial public offerings (IPOs) in African markets, particularly as these developing nations work to

create competitive and effective capital markets. Useful comparative contexts for analysing the Lusaka Securities Exchange (LuSE), especially with regard to short-term under-pricing and long-term performance, are offered by African stock exchanges like the Johannesburg Stock Exchange (JSE), Nairobi Securities Exchange (NSE), and Ghana Stock Exchange (GSE).

The JSE provides data on the dynamics of initial public offerings (IPOs) in comparably developed emerging countries because it is Africa's biggest and most liquid stock exchange. According to Govindjee and Sibanda (2021), IPOs on the JSE have average initial returns of more than 15% and suffer from severe short-term under-pricing. This tendency is ascribed to speculative behaviour and the restricted supply of shares on the public market, which generate strong investor demand during the initial public offering (IPO) period. IPO stocks often lag in the overall market for three to five years after listing, so these gains are rarely maintained over the long run. The analysis made clear that inefficiencies pertaining to information asymmetry and investor herding behaviour still affect the market even with the JSE's comparatively sophisticated infrastructure and regulatory framework.

Similar patterns can be seen in the NSE, a well-known market in East Africa. Wachira (2012) examined 15 first public offerings (IPOs) and found that oversubscription during the offering period and speculative investor demand led to an average initial under-pricing of 12%. Nonetheless, similar to the JSE, the NSE showed that IPO stocks underperformed over the long run-in comparison to market indices. This is because of the prevalence of retail investors, limited liquidity, and lax financial disclosure laws, all of which hinder effective price discovery and increase volatility. These difficulties are strikingly similar to those LuSE is facing, underscoring the broader constraints that impede IPO performance in African markets.

Even though the market environment on the GSE is considerably smaller, initial public offerings (IPOs) on this exchange show comparable trends of under-pricing in the short term and underperforming in the long term. Mensah (2008) found that IPOs on the GSE are significantly influenced by macroeconomic conditions such as inflation and interest rates. Additionally, the GSE's shallow market depth amplifies the volatility of IPO stocks, further contributing to their underperformance in the years following listing. Mensah emphasized that limited institutional investor participation and

inconsistent regulatory enforcement exacerbate these challenges, creating parallels with the experiences of LuSE.

Across these African markets, IPOs demonstrate consistent themes of short-term under-pricing followed by long-term underperformance. These trends are influenced by factors such as speculative trading, low liquidity, weak regulatory oversight, and information asymmetry. The similarities between the JSE, NSE, GSE, and LuSE underscore the systemic challenges that constrain IPO performance across the continent, particularly in markets dominated by retail investors and limited institutional participation.

#### *2.3.4 IPO Dynamics in Emerging Markets*

Emerging markets, characterized by their developmental potential and structural inefficiencies, provide a unique lens through which IPO dynamics can be analysed. Studies on IPOs in countries such as India, Malaysia, and other South-East Asian nations highlight the role of regulatory frameworks, investor behaviour, and market conditions in shaping IPO performance.

Emerging markets frequently have regulatory oversight constraints, limiting their capacity to enforce strong disclosure rules and investor safeguards. Zingales (1995) claimed that weak governance institutions in emerging nations aggravate information asymmetry, making it harder for investors to appropriately appraise the value of initial public offerings. This dynamic causes severe under-pricing during the IPO phase, as issuers and underwriters try to entice demand despite the uncertainties surrounding corporate valuations. For LuSE, where regulatory frameworks remain underdeveloped, the lack of market efficiency likely plays a central role in the observed long-term underperformance of IPOs.

Investor behaviour in emerging markets is often driven by psychological biases, such as overconfidence and herd mentality, as outlined by Barberis and Thaler (2003). These biases lead to speculative demand during the IPO phase, inflating initial stock prices and creating a short-term bubble effect. However, as rational valuation processes eventually dominate, these stocks experience significant corrections, resulting in long-term underperformance. This behavioural dynamic is particularly relevant for LuSE, where retail investors—often lacking the sophistication of institutional participants—dominate trading activity and amplify speculative trends.

Liquidity constraints are a defining feature of emerging markets, significantly affecting IPO pricing and performance. Black and Gilson (1998) emphasized that low trading volumes limit price discovery, making markets more susceptible to volatility. This issue is particularly pronounced in LuSE, where the absence of deep liquidity prevents IPO stocks from achieving stable pricing post-listing. Limited institutional investor participation further exacerbates this challenge, as retail investors often engage in short-term speculative trades rather than long-term value-driven investments.

#### 2.3.4.1 Case Studies in Emerging Markets:

- **India:** Agarwal et al. (2010) analysed IPOs in post-reform India, finding that high initial returns were driven by retail investor enthusiasm and under-pricing strategies by issuers. However, long-term underperformance was a recurring trend, attributed to overvaluation and speculative trading during the IPO phase.
- **Malaysia:** Ahmad and Jelic (2014) found that Malaysian IPOs underperformed market benchmarks over a three-year horizon. The study highlighted issues such as weak financial disclosure practices and inflated valuations, which are directly comparable to the challenges faced by LuSE.
- **South-East Asia:** Low et al. (2008) observed that macroeconomic stability and foreign investor participation were critical determinants of IPO performance in South-East Asia. These findings suggest that broader economic conditions play a pivotal role in shaping investor confidence and IPO outcomes, a factor that is equally relevant for LuSE.

Zulu (2009) investigated the performance of IPOs on the LuSE. The study analysed the returns of IPO stocks over a five-year period. Zulu found that IPOs on the LuSE generally provided positive returns in the long term, although the extent of these returns varied based on market conditions and company-specific factors. While Zulu's study provided valuable insights into the LuSE, it did not explore the effect of market efficiency or information asymmetry on IPO performance, leaving room for further investigation.

These findings, theories, and studies help illuminate the intricate relationship between IPOs and long-term stock price performance, considering the distinct dynamics and characteristics of the Zambian market.

### **2.3.5 Explanations for Long-Run Underperformance:**

Several explanations have been proposed to account for this long-run underperformance. Ritter (1991) suggested that investors may be irrationally over-optimistic about the future prospects of young and growth-oriented firms going public. Loughran and Ritter (1995) argued that the underperformance is due to misevaluation at the time of going public, with investors seemingly placing excessive weight on growth prospects and insufficient emphasis on mean-reverting trends.

Jain and Kini (1994) observed that investors tend to value IPO firms based on the expectation that projected earnings growth will continue indefinitely, even though pre-IPO profit margins are not sustained over the long run. Additionally, they noted a decline in post-issue operating performance relative to pre-IPO levels. These observations provide three potential explanations, including increased agency costs due to reduced management ownership, overstated pre-IPO performance indicators, and timing offerings during periods of exceptionally good performance that cannot be sustained in the future.

The timing of IPO issues plays a pivotal role in IPO firms' performance. Ritter (1991) highlighted that hot IPO issuing periods, associated with poor subsequent long-run returns, may be a contributing factor. Companies that successfully time new offerings to coincide with a "window of opportunity" may experience later underperformance. The clustering of issuing activities in time periods immediately preceding poor IPO performance is also noted, as it increases the likelihood of observing negative long-run abnormal returns.

### **2.3.6 Challenges Unique to Emerging Markets**

Most studies on IPO performance focus on developed markets, leaving the dynamics of emerging exchanges underexplored, particularly in terms of behavioural drivers and regulatory constraints. Emerging markets face unique challenges that influence IPO performance, and understanding these issues is crucial to framing the LuSE's operations.

1. **Low Liquidity:** A key characteristic of many emerging markets is low trading volume and limited market depth. This lack of liquidity reduces the ability of IPO stocks to stabilize their prices, creating volatility and contributing to underperformance in the long term. According to Allen and Song (2005), low

liquidity discourages institutional investors, who are instrumental in stabilizing prices and fostering efficient markets. For LuSE, this dynamic has significant implications for both IPO pricing and long-term stock valuation.

2. **Limited Investor Education:** The dominance of retail investors in markets like LuSE is coupled with a lack of financial literacy, which often results in speculative trading. Researchers such as Barberis and Thaler (2003) have observed that poorly informed retail investors are more likely to succumb to herding behaviour and overvalue IPO stocks, leading to short-term gains but subsequent long-term corrections. The lack of investor education in Zambia exacerbates this challenge, as retail participants often fail to analyse company fundamentals effectively.
3. **Regulatory Issues:** Weak regulatory frameworks and inconsistent enforcement exacerbate information asymmetry in emerging markets. Companies are often able to provide inadequate disclosures, leaving investors unable to accurately evaluate IPOs (La Porta et al., 1998). Additionally, the absence of robust governance mechanisms permits speculative behaviours to dominate IPO markets, undermining investor trust. For LuSE, addressing regulatory gaps is critical to reducing information asymmetry and improving market credibility.
4. **Behavioural Biases:** Investors in emerging markets frequently exhibit behavioural biases such as overconfidence, herd behaviour, and loss aversion. Kahneman and Tversky's (1979) Prospect Theory demonstrates that these biases influence decision-making under conditions of uncertainty, leading to irrational IPO pricing. In the context of LuSE, these biases often manifest as speculative demand during the IPO phase, followed by significant corrections once rational valuations prevail.

These empirical studies provided valuable insights into IPO performance in different markets, with varying results depending on market conditions, company size, and other factors. However, they also highlight gaps that this study aims to address, particularly in the context of the LuSE. By building on the limitations of these studies, this research provides a deeper understanding of the factors that influence long-term IPO performance on the LuSE

## 2.4 CONCEPTUAL FRAMEWORK

The conceptual framework was designed to integrate key theories with specific variables that are hypothesized to influence the long-term performance of Initial Public Offerings (IPOs) on the Lusaka Securities Exchange (LuSE). This framework provided a structured approach to examining how these variables interact with one another and ultimately impact IPO outcomes over time.

### 2.4.1 Dependent Variable; Long-term Stock Performance

- **Measurement:** Long-term stock performance was assessed through the following financial metrics:
  - **Mean Adjusted Buy and Hold Return (BHAR):** This metric measures the average return on a stock over a specified period, adjusted for market performance.
  - **Abnormal Returns (AR):** AR refers to the difference between the actual return on a stock and the expected return, typically based on market performance.
  - **Cumulative Abnormal Returns (CAR):** CAR aggregates abnormal returns over a period to assess the overall impact on the stock's performance.

This dependent variable is crucial as it reflects the success and stability of an IPO over an extended period, typically four years. The investigation into long-term stock performance provided insights into how well an IPO sustains its market value after the initial offering.

### 2.4.2 Independent Variables:

The choice of variables in this study were both theoretically motivated and empirically supported. These variables were key to understanding the determinants of IPO performance, particularly in emerging markets like the Lusaka Securities Exchange (LuSE). Their selection was informed by key theoretical frameworks which provided a comprehensive lens through which to evaluate IPO dynamics.

#### 2.4.2.1 Firm Size

Firm Size is one of the most commonly used variables in IPO research and is measured by the total assets of the company at the time of its IPO. Larger firms are

typically perceived as more stable and less risky due to their established operational track records and resource capabilities. According to Signalling Theory (Spence, 1973), larger firms signal higher quality and growth potential, thus reducing information asymmetry between the firm and investors. In the context of Behavioural Finance, investors may exhibit a bias toward larger firms, perceiving them as less risky and more capable of generating long-term value. This leads to higher demand during the IPO phase, resulting in initial price increases. However, the effect of firm size on long-term performance may eventually wane in markets like the LuSE, where speculative behaviour is more prominent and investor knowledge may be lower. Firm size should be correlated with correct IPO pricing, according to the Efficient Market Hypothesis (EMH). However, in emerging markets, inefficiencies including low liquidity and low institutional participation frequently distort this link.

#### 2.4.2.2 Issue Size

The total value of shares sold during the initial public offering (IPO) is known as the issue size, and it is frequently used as a gauge of the company's capital-raising objectives. According to Signalling Theory, a bigger issue size should indicate more market confidence and growth potential (Leland & Pyle, 1977). Larger issue sizes are more often linked to higher institutional investor interest in developed markets, which results in more steady post-IPO performance. Though market inefficiencies including low liquidity and investor knowledge can lead to mispricing, the EMH contends that greater IPOs in emerging markets like the LuSE should represent market efficiency. Large issue sizes can sometimes result in overvaluation during the initial public offering (IPO) phase, followed by long-term corrections in markets where investor knowledge is limited. Behavioural Finance also emphasizes how speculative demand and investor mood can drive huge initial public offerings (IPOs), which can result in exaggerated short-term gains that are not long-term viable.

#### 2.4.2.3 Subscription Level

The ratio of shares subscribed to shares offered during the initial public offering (IPO) is known as the subscription level. It serves as an indicator of investor demand. Strong investor enthusiasm is typically reflected in high subscription levels, and behavioural finance variables like overconfidence and herding behaviour are often the driving forces behind this demand (Barberis & Thaler, 2003). Speculative behaviour can drive up subscription levels and result in short-term IPO under-pricing, as investors chase

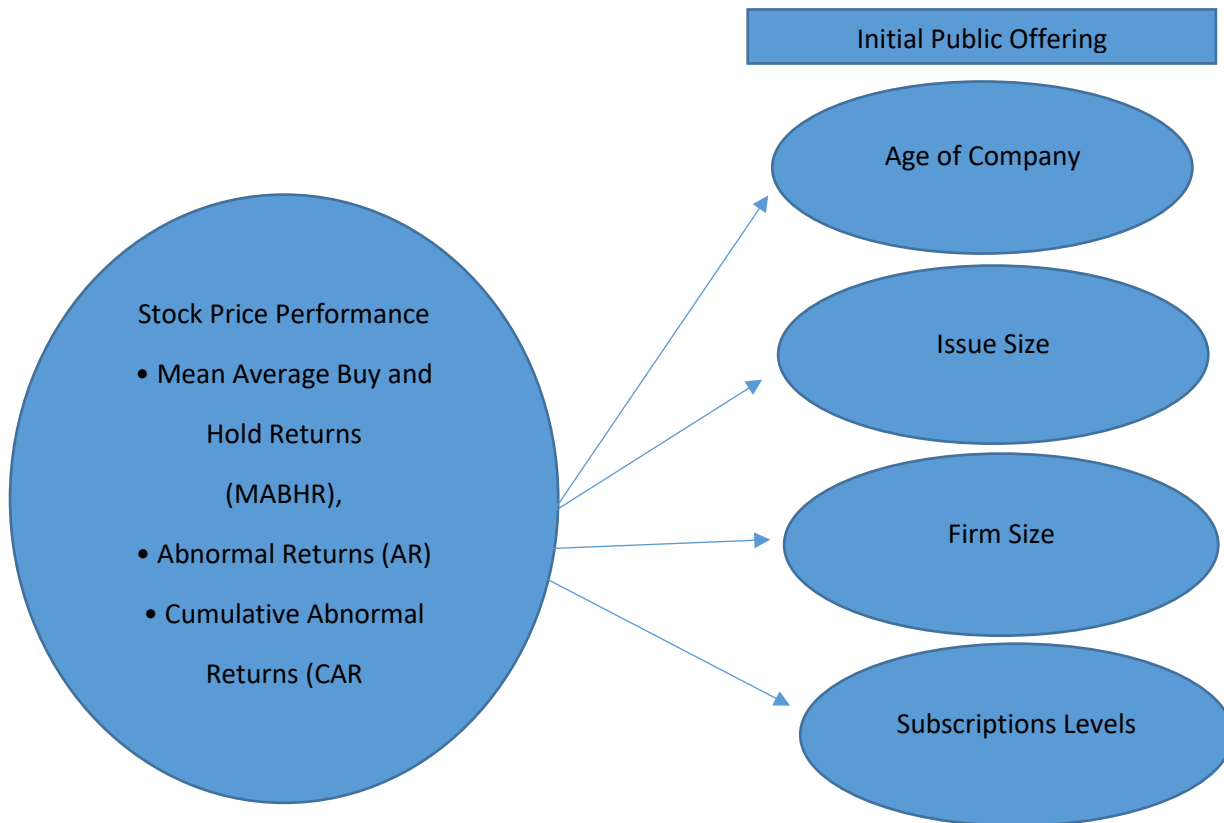
perceived opportunities without fully assessing the company's fundamentals. However, this speculative enthusiasm tends to fade over time, leading to long-term corrections and underperformance, as seen in many emerging markets. Signalling Theory suggests that high subscription levels can serve as a positive signal of investor confidence in the firm's prospects. Still, in the absence of adequate market depth and investor education, this signal is often skewed by speculative behaviour, which ultimately impacts long-term performance.

#### 2.4.2.4 Age of the Firm

Age of the Firm refers to the number of years a company has been in existence before going public, representing the maturity and historical performance of the business. Older firms are often perceived as more established and stable, with a track record that provides investors with more reliable data on performance. Signalling Theory posits that older firms may signal quality to the market, as they have survived longer and proved their business model. However, issues like market illiquidity or regulatory shortcomings may lessen the beneficial effect of the age of the firm in emerging markets. From the standpoint of behavioural finance, older companies might also have to deal with market mispricing since the market prioritizes short-term speculation above long-term fundamentals. Additionally, EMH would contend based on previous data that the market ought to price older companies more properly; yet, this is sometimes undermined by the inefficiencies of new markets.

The four variables played a critical role in the study's conceptual framework. According to the Efficient Market Hypothesis (EMH), market prices take into account all relevant information. However, these factors are not fully represented in IPO pricing due to inefficiencies in market operations, as seen in emerging markets. In addition, Behavioural Finance draws attention to the fact that psychological biases and investor mood play a key role in short-term IPO price distortions. Signalling Theory on the other hand highlights that these factors function as indicators to the market regarding a company's potential even though the efficacy of these indicators is frequently diminished in markets such as LuSE because of information asymmetry and a lack of governmental supervision. When put together, these variables offer a comprehensive understanding of IPO dynamics by integrating behaviour-driven and market-driven factors that affect IPO performance on the LuSE.

After a thorough analysis, these determinants yielded insightful information about how companies' stock prices performed after their IPOs.



*Figure 1 conceptual framework*

#### 2.4.3.1 Application of Theories:

1. **Efficient Market Hypothesis (EMH):** This hypothesis was tested by analysing how efficiently the LuSE prices IPOs based on available public information. Variables like Firm Size and Subscription Rate were examined to see if the market's pricing reflects all relevant information, as EMH suggests.
2. **Information Asymmetry Theory:** This theory was used to assess how differences in information between insiders and the public affect IPO pricing and long-term performance. The focus was on Firm Size and Age of the Firm, as these variables are closely linked to the degree of information asymmetry present.

3. **Signalling Theory:** This theory explored how firms use specific signals, such as the size of the offer, to convey their quality to the market. The study investigated how these signals influence investor behaviour and the success of IPOs, particularly in terms of long-term performance.
4. **Behavioural Finance Theory:** This theory was applied to understand the impact of investor sentiment and market psychology on IPO pricing and outcomes. It was particularly relevant in analysing variables like Subscription Rate and Investor Sentiment, where psychological factors play a significant role in market behaviour.
5. **Winner's Curse Hypothesis:** This theory justified long-term underperformance due to overvaluation driven by speculative demand, especially in markets with high uncertainty and insufficient information.

## CHAPTER THREE:

### RESEARCH METHODOLOGY

#### 3.1 INTRODUCTION

This chapter outlined the methodology adopted to investigate the long-term performance of Initial Public Offerings (IPOs) on the Lusaka Securities Exchange (LuSE). It encompasses the research design, study population, sampling techniques, data collection methods, and data analysis strategies. These components were structured to address the core research questions and ensure a comprehensive evaluation of IPO performance.

#### 3.2 RESEARCH DESIGN

The research design was crafted to answer the central research questions:

1. How have companies listed on the LuSE performed in terms of their stock prices over the long run following an IPO?
2. After an initial public offering (IPO) on the LuSE, what factors influence long-term stock price performance?
3. How do investor behaviour and market conditions affect IPOs' long-term performance on the LuSE

A mix of regression, correlational, and descriptive designs were used to answer the research questions:

*Descriptive Design:* The descriptive design gave a first grasp of the long-term stock price performance measures and independent variables selected for the study. Using Mean Average Buy-and-Hold Abnormal Returns (MABHAR) and Cumulative Abnormal Returns (CAR), long-term stock price movements were summarized establishing a baseline of initial public offering (IPO) performance.

*Correlational Design:* This looked at how different independent variables and IPO performance measures related to each other in order to identify the elements *influencing long-term stock price fluctuations*.

*Regression Design:* By measuring the effect of independent variables on initial public offerings (IPO) performance, multiple regression analysis assessed the ways in which the selected independent variables affect long-term fluctuations in stock prices.

*Event Study Design:* This study measured departures from market expectations to evaluate the impact of investor behaviour and market dynamics on initial public offerings (IPOs).

### **3.3 STUDY POPULATION**

All 24 IPOs that were registered on the LuSE as of December 2023 were included in the study population, guaranteeing that a wide variety of IPOs and market conditions were recorded. Financial databases, company reports, and LuSE official records were the sources of the data, which offered a strong basis for analysing IPO performance and long-term stock price performance.

### **3.4 SAMPLE SIZE**

The study examined only 12 of the 24 IPOs filed on the LuSE between 1994 and 2023. This decision was driven by data availability, as the remaining IPOs lacked the comprehensive historical financial records. The low number of IPOs reflects LuSE's small size and the young nature of its securities industry as compared to larger global exchanges.

### **3.5 SAMPLING TECHNIQUES**

To choose IPOs that met the study's objectives, a purposive sampling technique was used. IPOs listed on the LuSE between 1994 and 2023 were selected expressly for their relation to the research questions. Purposive sampling ensured that participants were in line with the research objectives. To improve sample representativeness, IPOs were stratified by IPO size and time period, allowing for a structured comparison of IPO performance across various contexts and conditions.

### **3.6 DATA COLLECTION/INSTRUMENTS**

Due to the analysis's historical nature, the study relied heavily on secondary sources. Data were gathered from a variety of secondary sources, including Lusaka Securities Exchange (LuSE) official documents, financial reports, annual reports, and other publicly available sources. These sources provided detailed information about IPO listings, stock prices, and financial performance.

Stock price and financial performance data were obtained from LuSE records and corporate annual reports. On addition, financial databases and academic journals were used to obtain essential information and scholarly articles on initial public offerings, stock price performance, and related ideas.

To guarantee accuracy and consistency, pertinent IPO-related data—such as stock prices, issue sizes, and financial performance metrics—was painstakingly taken from LuSE records and company websites. Cross-checking information from several sources confirmed consistency, and data was reviewed across many sources to assure correctness and trustworthiness.

### **3.7 DATA ANALYSIS**

The data analysis process was designed to address the research questions using various statistical techniques and utilising SPSS and Microsoft excel packages for analysis

#### **1. Descriptive Statistics:**

- Objective: To summarize long-term stock price performance.
- Method: This was achieved by calculating summary statistics such as means, medians, and standard deviations for IPO performance metrics, including BHAR and CAR.

#### **2. Correlational Analysis:**

- Objective: To explore factors driving long-term stock price performance and understand the influence of market dynamics.
- Method: This was achieved by computing correlation coefficients between IPO performance metrics and independent variables, to identify significant relationships.

#### **3. Multiple Regression Analysis:**

Objective: To measure how independent variables affect IPO performance.  
Method: Multiple Linear Regression was used to measure the influence of specific independent variables on the performance of the stock price over the long run. The Ordinary Least Squares (OLS) regression model was used to break down performance variation into different variables. This method aids in determining the strength and direction of the correlation between a number of independent variables and the dependent variable. The percentage of variation in the dependent variable that can be accounted for by the independent variables was shown by the R square and the adjusted R square that it produced. The relationship between the

long-term performance of initial public offerings (IPOs) and potential variables has been investigated using the regression model below.

$$\text{Long-Term Stock Price Performance} = \alpha + \beta_1 \text{Age}_i + \beta_2 \text{FirmSize}_i + \beta_3 \text{IssueSize}_i + \beta_4 \text{SubscriptionLevels}_i + \varepsilon_i$$

#### 4. Event Study Analysis:

- Objective: To assess how market dynamics and investor behaviour influence IPO performance using Mean Adjusted Buy and Hold Return (MABHR) Model and Market model which incorporating Cumulative Abnormal Returns (CAR) and Abnormal Returns (AR)

#### Mean Adjusted Buy and Hold Return (MABHR) Model

- Method: Mean Adjusted Buy and Hold Return (MABHR) Model was used to calculate market-adjusted returns for each IPO, measuring deviation from market expectations using the formula below:

$$MABHR_i = (\ln P_{it} / \ln P_{it-1} - \ln M_{it} / \ln M_{it-1})$$

- for  $t = 2$  to  $n$
- Where:  $MABHR_i$  represents the market-adjusted buy and hold return for firm "i."
- $P_{it}$  and  $M_{it}$  denote the closing price of stock "i" and the closing index in year "t."
- "n" represents the sample size.
- The T-statistic for Cumulative Abnormal Returns (CAR) was computed to test its significance.

#### Market Model

- Market Model: Computed Abnormal Returns (AR) and Cumulative Abnormal Returns (CAR) were used to assess deviations from expected returns and the actual returns.
  - Step 1: The four 4 yearly benchmark-adjusted returns (AR) was calculated for each IPO stock using the formula below:

$$AR_{it} = R_{it} - R_{bt}$$

- Step 2: The average benchmark-adjusted returns for each event year "t" was determined by averaging the AR for all stocks in the sample.

$$AR_t = \Sigma AR_{it} / n$$

- Step 3: Cumulative Average Abnormal Returns (CARs) was computed by summing the AR for each stock and equally weighting them.

$$CAR_{it} = \Sigma AR_{it} / N$$

- Significance Testing: The t-statistics for MABHR and CARs were calculated using Corrado and Zivney's (1992) model to test for statistical significance.

### 3.8 ETHICAL CONSIDERATIONS

Ethical standards were rigorously followed throughout the research process, particularly in the collection, handling, and analysis of secondary data. The data used in this study was obtained from publicly accessible sources, including official financial statements, market reports from the Lusaka Securities Exchange (LuSE), and other reputable platforms such as Bloomberg and Reuters. All data was validated for accuracy and consistency by cross-referencing multiple sources to minimize errors and discrepancies.

The data selected for analysis involved aggregated firm-level information which were readily available from public financial records. Personal data or sensitive investor information was not involved, and no identifiable data was used. This ensures that the research adheres to privacy and data protection standards, avoiding ethical concerns related to personal or private information.

Furthermore, the data was handled with a focus on integrity and transparency. Any discrepancies or limitations in the data were acknowledged, ensuring that the findings reflect the reality of the data and the limitations inherent in using secondary sources. In line with ethical research practices, all sources of data were properly credited in the reference list, maintaining the academic integrity of the study.

## CHAPTER FOUR

### PRESENTATION AND ANALYSIS OF RESULTS

#### 4.1 INTRODUCTION

In this chapter, the results from the analyses conducted to examine IPO performance on the Lusaka Securities Exchange (LuSE) were presented and interpreted. Using descriptive statistics, correlation analysis, regression analysis, and event study approaches, factors such as Issue Size, Firm Size, Subscription Level, and Age of Firm were analysed to determine their effect on IPO performance.

#### 4.2 DESCRIPTIVE STATISTICS

##### 4.2.1 Overview of Key Variables

This section presented the descriptive statistics for the primary IPO performance metrics and independent variables, highlighting trends and patterns that provided insights into the characteristics of IPOs on LuSE.

##### 4.2.2 Descriptive Statistics Findings

Table 1: Descriptive Statistics for IPO Performance Metrics and Predictors-Dependent Variables

	<b>CAR</b>	<b>BHAR</b>	<b>AR</b>
<b>Mean</b>	-354.8997943	67.77439716	3.450290654
<b>Standard Error</b>	56.02983699	32.84532687	1.435689493
<b>Median</b>	-435.7826231	12.45238095	0.554133558
<b>Standard Deviation</b>	194.0930488	113.7795499	4.973374293
<b>Sample Variance</b>	37672.1116	12945.78597	24.73445185
<b>Minimum</b>	-459.1030483	0.22815534	-0.649486873
<b>Maximum</b>	112.3695476	317.1818182	12.98209207

##### 4.2.2.1 IPO Performance Metrics

1. Cumulative Abnormal Return (CAR): The mean CAR of -354.90 indicates that, on average, IPOs underperform significantly compared to expected market benchmarks in the long term. This finding aligns with previous studies on IPO performance, which often reveal a decline in IPO performance after the initial

excitement wanes, a phenomenon commonly known as long-run IPO underperformance (Ritter, 1991).

The high standard deviation (194.09) and broad range (from -459.10 to 112.37) underscore substantial heterogeneity in CAR across IPOs, suggesting that while most IPOs experience negative cumulative abnormal returns, a subset of IPOs perform positively. This dispersion is likely influenced by factors specific to each IPO, such as firm age, industry, and market conditions at the time of issuance.

2. Buy and Hold Abnormal Return (BHAR): The mean BHAR of 67.77 suggests that, on average, IPOs outperform market benchmarks in a buy-and-hold context. However, the high standard deviation (113.78) and positive skew (mean > median) indicate that while some IPOs achieve significant buy-and-hold returns, the majority yield lower returns, with a few positive outliers inflating the average. This finding reflects the risk-reward profile of IPOs, where only select IPOs achieve substantial gains, consistent with the findings of Ljungqvist and Wilhelm (2003).

The broad range of BHAR values (0.23 to 317.18) highlights the disparity between IPOs that perform exceptionally well and those that barely meet market benchmarks, reinforcing the notion that IPOs present diverse risk profiles with inconsistent outcomes.

3. Abnormal Return (AR): The mean AR of 3.45 indicates that IPOs tend to provide positive abnormal returns in the short term, suggesting an initial post-IPO uptick likely due to investor enthusiasm or early trading momentum. This aligns with the concept of IPO under-pricing, where initial returns often spike due to investor demand outstripping supply (Ibbotson, Sindelar, & Ritter, 1988).

The moderate standard deviation (4.97) and relatively small range of AR values (-0.65 to 12.98) suggest that, compared to CAR and BHAR, short-term abnormal returns are more consistent across IPOs, reflecting market norms in pricing newly listed firms. However, the positive skew (mean > median) again implies that while most IPOs show modest AR, select IPOs experience disproportionately high abnormal returns, possibly driven by favourable media coverage or market speculation.

Table 2 Descriptive Statistics for IPO Performance Metrics and Predictors-Independent Variables

	<i>Age of Firm</i>	<i>Issue Size</i>	<i>Firm Size</i>	<i>Subscription Level</i>
<b>Mean</b>	30.83333	13.34298	59.17085	1.007833
<b>Standard Error</b>	4.420739	6.726707	31.26622	0.046054
<b>Median</b>	35	0.963815	9.338001	0.9825
<b>Standard Deviation</b>	15.31389	23.302	108.3094	0.159536
<b>Sample Variance</b>	234.5152	542.9831	11730.92	0.025452
<b>Minimum</b>	5	0.00442	0.0442	0.875
<b>Maximum</b>	55	72.072	360.36	1.5

#### 4.2.2.2 Predictors of IPO Performance

1. Age of Firm: With a mean age of 30.83 years and a standard deviation of 15.31, the dataset reflects a diversity in the maturity of firms going public. The high age range (5 to 55 years) indicates that IPOs include both young and well-established firms. Prior research suggests that older firms may benefit from established track records, potentially enhancing investor confidence and supporting higher abnormal returns (Certo et al., 2003).
2. Issue Size: The mean issue size of 13.34, coupled with a high standard deviation of 23.30, reflects substantial variability in the amount of capital raised across IPOs. Larger issue sizes may signal either high investor demand or a need for significant capital. This finding aligns with prior studies, such as Loughran and Ritter (2004), which argue that larger offerings may face dilution effects, leading to reduced abnormal returns.
3. Firm Size: With a mean firm size of 59.17 and a high standard deviation of 108.31, the dataset includes both small and large firms. The weak negative correlation between firm size and long-term performance (CAR and BHAR) suggests that larger, more established firms may yield more moderate returns, likely due to limited growth potential compared to smaller firms (Fama & French, 1992).

4. Subscription Level: The mean subscription level of 1.01 with a low standard deviation (0.16) suggests that most IPOs are fully subscribed, indicating stable demand across offerings. However, the negative correlation with CAR suggests that high initial demand, potentially driven by early market hype, does not necessarily translate into sustained performance, which supports the overreaction hypothesis seen in some IPO studies (Aggarwal & Rivoli, 1990).

The descriptive statistics reveal notable patterns in IPO performance and its influencing factors. The metrics of CAR, BHAR, and AR illustrate the variability in post-IPO returns, with long-term returns (CAR and MABHAR) showing significant dispersion, likely driven by firm characteristics and market perceptions.

### 4.3 CORRELATION ANALYSIS

#### 4.3.1 Correlation Matrix

The correlation analysis helped identify relationships between the performance metrics (BHAR, AR, CAR) and independent variables (Issue Size, Firm Size, Subscription Level, Age of Firm).

Table 3 Correlation Matrix of IPO Performance Metrics and Predictors

	<i>CAR</i>	<i>BHAR</i>	<i>AR</i>
<i>CAR</i>	1		
<i>BHAR</i>	<b>0.427926</b>	1	
<i>AR</i>	<b>-0.3101</b>	<b>0.213744</b>	1
Age of Firm	<b>0.183617</b>	<b>0.120928</b>	<b>0.451208</b>
Issue Size	<b>-0.1996</b>	<b>-0.33822</b>	<b>0.217261</b>
Firm Size	<b>-0.23421</b>	<b>-0.28326</b>	<b>0.161149</b>
Subscription Level	<b>-0.319</b>	<b>-0.15316</b>	<b>-0.0544</b>

#### 4.3.2. Correlation Findings

To interpret the IPO performance metrics against the factors affecting IPO performance, we examined the relationships between each performance metric (CAR, BHAR, AR) and key factors. These relationships offer insights into how these factors might influence or correlate with IPO returns.

#### 1. CAR (Cumulative Abnormal Return) and Influencing Factors

- **CAR and Age of Firm (0.18):** A weak positive correlation suggests that as firms get older, their CAR may slightly increase. Older firms might benefit from established credibility and investor confidence, which can lead to more stable returns. However, the correlation is not strong, indicating that age alone is not a significant predictor of long-term CAR.
- **CAR and Issue Size (-0.20):** A weak negative correlation indicates that IPOs with larger issue sizes may experience slightly lower CAR. Larger issue sizes could lead to dilution concerns among investors or signal that the company requires substantial capital, which may affect investor perception and moderate long-term cumulative returns.
- **CAR and Firm Size (-0.23):** This weak negative correlation suggests that larger firms tend to have slightly lower CAR. Large firms might have slower growth potential, as they are often already well-established. Conversely, smaller firms might be perceived as having greater growth opportunities, potentially leading to higher cumulative abnormal returns.
- **CAR and Subscription Level (-0.32):** A moderate negative correlation suggests that higher subscription levels are associated with lower CAR. This could imply that high initial demand may be driven by initial hype, which might not translate into long-term performance. Over time, prices may correct, leading to lower cumulative abnormal returns.

## 2. BHAR (Buy and Hold Abnormal Return) and Influencing Factors

- **BHAR and Age of Firm (0.12):** The weak positive correlation indicates that older firms might have slightly higher BHAR, but the relationship is not strong. Older firms often have a track record, which may attract investors, though this factor alone does not substantially impact BHAR.
- **BHAR and Issue Size (-0.34):** A moderate negative correlation here indicates that larger issue sizes tend to correlate with lower BHAR. This could suggest that investor concerns about dilution or a perception that larger issues might signal companies seeking heavy capital infusion, which might limit investor returns in a buy-and-hold context.

- **BHAR and Firm Size (-0.28):** This low negative correlation implies that larger firms may have lower BHAR. Similar to CAR, this shows that larger, more established enterprises may not have the same growth potential as new firms, affecting buy-and-hold returns.
- **BHAR and Subscription Level (-0.15):** A weak negative correlation shows that increasing subscription levels may somewhat reduce BHAR. High initial demand might result in overpricing at the IPO, and prices may stabilize or drop in the long run, hurting buy-and-hold returns.

### 3. AR (Abnormal Return) and Influencing Factors

- A marginally positive correlation (0.45) suggests that older enterprises may have higher AR. Age may serve as a surrogate for stability, experience, and trustworthiness, which could entice investors, particularly in the short run.
- The association between AR and issue size (0.22) is positive but modest, indicating that greater issue sizes may result in slightly higher anomalous returns. This may occur if larger issues receive significant attention or if these firms are seen as more trustworthy, however the impact is minor

AR and Firm Size (0.16): A modest positive association indicates that larger firms may have a somewhat higher AR. Larger companies frequently receive greater media coverage and investor attention, which can raise short-term returns due to increased investor demand.

- AR and Subscription Level (-0.05): The near-zero correlation indicates that subscription level has no meaningful impact on AR. While early demand can be great, it does not always convert into larger abnormal returns, particularly in the short term.

## 4.4 MULTIPLE REGRESSION ANALYSIS

### 4.4.1 Objective and Model Summary

The regression analysis sought to evaluate the relationship between firm characteristics and several return metrics, including Abnormal Returns (AR), Buy and Hold Returns (BHAR), and Cumulative Abnormal Returns (CAR) for the years 2011, 2015, 2019, and 2023. Several notable discoveries emerge from the results.

#### 4.4.2 Data Overview

The investigation included a modest sample size of 12 IPOs from four different years: 2011, 2015, 2019, and 2023. Because of the small sample size, statistical power is inherently limited, reducing the reliability of inferences about the relationships between the independent variables—age of firm, issue size, firm size, and subscription level—and the dependent variables—abnormal return (AR), buy and hold abnormal return (BHAR), and cumulative abnormal return (CAR).

#### Regression Coefficients and p-values for IPO Performance Metrics 2023

Table 4 AR Regression Model Result

Predictor	Coefficients	Standard Error	t Stat	P-value
Intercept	<b>1181.6199</b>	<b>1326.1281</b>	<b>0.8910</b>	<b>0.4025</b>
Age of Firm	<b>1.9696</b>	<b>2.7864</b>	<b>0.7069</b>	<b>0.5025</b>
Issue Size	<b>-35.4734</b>	<b>24.9726</b>	<b>-1.4205</b>	<b>0.1984</b>
Firm Size	<b>8.8585</b>	<b>6.9688</b>	<b>1.2712</b>	<b>0.2443</b>
Subscription Level	<b>-1215.8923</b>	<b>1375.4520</b>	<b>-0.8840</b>	<b>0.4060</b>

Table 5 BHAR Regression Model Results

Predictor	Coefficients	Standard Error	t Stat	P-value
Intercept	<b>35.0188</b>	<b>60.1691</b>	<b>0.5820</b>	<b>0.5788</b>
Age of Firm	<b>0.1191</b>	<b>0.1264</b>	<b>0.9419</b>	<b>0.3776</b>
Issue Size	<b>-0.4775</b>	<b>1.1331</b>	<b>-0.4214</b>	<b>0.6861</b>
Firm Size	<b>0.1614</b>	<b>0.3162</b>	<b>0.5103</b>	<b>0.6255</b>
Subscription Level	<b>-38.1179</b>	<b>62.4071</b>	<b>-0.6108</b>	<b>0.5606</b>

Table 6 CAR Regression Model Results

Predictor	Coefficients	Standard Error	t Stat	P-value
Intercept	1012.5436	2647.4309	0.3825	0.7135
Age of Firm	0.0401	5.5626	0.0072	0.9945
Issue Size	-16.2932	49.8543	-0.3268	0.7534
Firm Size	4.8988	13.9122	0.3521	0.7351
Subscription Level	-1429.946	2745.8993	-0.5208	0.6186

#### 4.4.3. Coefficient Analysis

Across all years, the regression coefficients provide insight into the directionality of each independent variable's relationship with the performance metrics, albeit with non-significant findings.

- **Age of Firm:** The coefficients are generally positive across models, suggesting a trend where older firms might yield higher returns, aligning with theories that associate firm age with operational stability and investor confidence. However, this positive trend lacks statistical support, indicating that age alone does not significantly affect IPO returns in this dataset.
- **Issue Size:** Coefficients are consistently negative, implying a possible inverse relationship between issue size and IPO performance. This suggests that larger issues may dilute share value, potentially leading to lower returns. Although this trend aligns with studies highlighting dilution effects, it is not statistically significant in this analysis.
- **Firm Size:** Results are mixed, with some positive associations observed in certain years, possibly indicating that larger firms could be viewed as more stable investments. However, the inconsistency and lack of significance across models suggest that firm size is not a robust predictor of IPO performance in this context.
- **Subscription Level:** Generally appearing with negative coefficients, particularly affecting CAR, this variable might indicate that oversubscription reflects inflated initial demand, which does not sustain long-term returns. While oversubscription is sometimes associated with positive short-term

performance, the lack of significance here suggests this may not hold for IPOs on the Lusaka Securities Exchange.

#### 4.4.4. Model Performance<sup>1</sup>

The **R-squared (R<sup>2</sup>)** values across models were generally low, indicating limited explanatory power. The R<sup>2</sup> values ranged from 0.0485 in the 2019 AR model to 0.3616 in the 2023 BHAR model. This low R<sup>2</sup> suggests that the models only explain a small portion of the variance in IPO returns. In the case of negative adjusted R-squared values, particularly in 2019 and 2023, this signals that the inclusion of additional predictors may not improve model performance and may, in fact, increase random variance in the model. Low or negative adjusted R<sup>2</sup> values in financial modelling often imply a poor fit, suggesting that the independent variables are insufficient for explaining the observed returns.

#### 4.4.5. Statistical Significance

None of the models reached statistical significance, as indicated by high Significance F values ( $p > 0.05$ ) across all years. In regression analysis, a significant F-statistic indicates that at least some predictor variables reliably explain the variation in the dependent variable. In this study, the lack of statistical significance suggests that the independent variables do not form a meaningful relationship with AR, BHAR, or CAR. This lack of significance might be attributable to the small sample size, which increases the likelihood of Type II errors (failing to detect a real effect), or it may reflect that these predictors are inherently weak indicators of IPO performance on this exchange.

#### 4.4.6. Yearly Analysis<sup>2</sup>

- **2011:**
  - **AR Model:** The R<sup>2</sup> of 0.0976 indicates limited explanatory capacity, with no statistically significant coefficients.
  - **BHAR Model:** Similarly, the R<sup>2</sup> of 0.0864 reflects minimal explanatory power, showing that the predictors provide little insight into BHAR for IPOs in this year.

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<sup>1</sup>For model performance tables refer to appendix 2

<sup>2</sup> For tables refer to appendix 2

- **2015:**
  - **AR Model:** An  $R^2$  of 0.1958, slightly higher than 2011, yet still lacking statistical significance, suggesting weak relationships between predictors and AR.
  - **BHAR Model:** The model again shows limited explanatory capacity ( $R^2 = 0.0864$ ), with non-significant predictor relationships.
- **2019:**
  - **AR Model:** With the lowest  $R^2$  of 0.0486, the 2019 model reflects an especially poor fit, indicating little predictive relevance from the independent variables for this year's AR.
  - **BHAR Model:** Similarly low  $R^2$  (0.0687), suggesting weak or no predictive relationship for BHAR in 2019.
- **2023:**
  - **AR Model:** The  $R^2$  of 0.3122, while higher than in previous years, still reflects a model with limited predictive accuracy and non-significant predictors.
  - **BHAR Model:** The highest  $R^2$  (0.3616) across all models shows some improvement in explaining variance; however, the predictors remain statistically insignificant.
  - **CAR Model:** An  $R^2$  of 0.1257 reflects that the model is generally ineffective at predicting CAR in 2023, with predictors lacking statistical significance.

#### 4.5 EVENT STUDY ANALYSIS

The event study analysis was implemented to investigate the impact of specific IPO events on the performance metrics. This method allowed for a more focused examination of how variables such as the age of the firm, issue size, and subscription levels affect IPO performance over time.

#### 4.5.1 T-Statistics Analysis

The calculations for the T-statistics associated with the Cumulative Average Abnormal Returns (CAR) and the Mean Adjusted Buy and Hold Return (MABHR) provided further insights into the performance of IPOs on the Lusaka Securities Exchange (LuSE). The results are as follows:

- **Cumulative Average Abnormal Returns (CAR):** The T-statistic for CAR is approximately **-3.39**. This negative value indicates that the cumulative abnormal returns are significantly different from zero, suggesting underperformance relative to the market. A T-statistic of this magnitude typically indicates statistical significance at conventional levels (e.g.,  $p < 0.05$ ), reinforcing the conclusion that the IPOs, on average, underperformed during the event period. This underperformance is indicative of potential issues related to market sentiment, investor expectations, or other external factors influencing the stock performance post-IPO. Consistent with Wachira (2012) in Kenya, high subscription levels on LuSE appear driven by early speculation rather than informed valuation, leading to negative CAR in the long term.
- **Mean Adjusted Buy and Hold Return (MABHR):** In contrast, the T-statistic for MABHR is approximately **0.29**, which is close to zero. This suggests that the mean adjusted buy and hold return is not significantly different from zero, indicating that the IPOs did not outperform the market when adjusted for the buy and hold strategy. This finding aligns with the Efficient Market Hypothesis (EMH), which posits that stock prices reflect all available information and that investors should not expect to achieve sustained abnormal returns over the long term.

## CHAPTER FIVE:

### DISCUSSION OF FINDINGS

#### 5.1 INTRODUCTION

This chapter synthesized the key findings of the study, reflecting on how firm-specific variables and event-driven performance metrics affect IPO outcomes on the LuSE. It discussed the results from both the regression models and the event study analysis, including Cumulative Average Abnormal Returns (CAR) and Mean Adjusted Buy and Hold Return (MABHR), using T-statistics to evaluate statistical significance. The findings are contextualized within the theoretical framework to explore potential explanations for observed trends.

#### 5.2 Discussion of 2023 Multiple Regression Results

##### 5.2.1 Model Performance and Explanatory Power

The regression models for 2023 yielded relatively low R-squared ( $R^2$ ) values, with the BHAR model achieving the highest  $R^2$  at 0.3616, the AR model at 0.3122, and the CAR model at 0.1257. These  $R^2$  values suggest that the models explain only a limited portion of the variance in IPO performance metrics. This finding implies that the selected variables account for only a fraction of the factors influencing IPO returns on the LuSE. In IPO performance literature, lower  $R^2$  values are common, especially in models focusing on emerging markets, where additional variables—such as market sentiment, economic indicators, or sector-specific trends—can play a substantial role in explaining variance (Loughran & Ritter, 2004).

The negative adjusted R-squared values observed in some of the models indicate that the explanatory power does not improve with the inclusion of additional predictors, raising questions about the predictive relevance of these variables for IPO outcomes in this context. Negative adjusted R-squared values suggest that the independent variables may not contribute meaningful information beyond random chance. From an academic perspective, this finding highlights the limitations of relying solely on firm-specific characteristics to predict IPO performance in emerging markets, where external factors and investor sentiment might exert more substantial influences on stock returns (Aggarwal & Rivoli, 1990).

### 5.2.2 Statistical Significance

Across all three models for 2023, none of the predictors were statistically significant at conventional levels ( $p < 0.05$ ). The high Significance F values reinforce that these models lack statistically reliable relationships between the independent variables and IPO performance metrics. This lack of significance implies that the predictors—Age of Firm, Issue Size, Firm Size, and Subscription Level—do not exhibit a robust association with post-IPO returns in the 2023 dataset. In IPO research, statistical insignificance often suggests that other latent factors or external market conditions might be more influential than the internal characteristics of the firm (Certo et al., 2003). For instance, the small size and unique characteristics of the LuSE could limit the generalizability of conventional IPO predictors, as the market may operate differently from larger, more liquid exchanges.

### 5.2.3 Interpretation of Coefficients

Despite the lack of statistical significance, the direction of the coefficients for each variable provides some insight into potential relationships:

1. **Age of Firm:** The coefficients for Age of Firm were generally positive across models, suggesting that older firms may be associated with higher abnormal returns. This aligns with prior studies suggesting that older firms benefit from established reputations and operational stability, which can appeal to investors seeking more predictable returns (Certo et al., 2003). However, the weak evidence from this sample indicates that firm age alone may not be a decisive factor in influencing IPO performance on the LuSE.
2. **Issue Size:** The coefficients for Issue Size were predominantly negative, implying a potential inverse relationship with returns. This finding aligns with the dilution effect theory, where larger issue sizes can lead to a diluted share value, potentially suppressing long-term returns. Such a relationship, while common in IPO studies, lacks statistical support here, likely due to the limited sample size and possible variance in investor demand or market capacity to absorb larger issues (Loughran & Ritter, 2004).
3. **Firm Size:** The impact of Firm Size showed mixed directions, with some models indicating a positive association with returns. A positive coefficient for Firm Size could imply that larger firms may instil greater investor confidence, as they are

often seen as more financially stable and less vulnerable to early-stage risks. However, the lack of significance in this sample limits the robustness of this conclusion, suggesting that other firm-specific or external factors may overshadow the effect of Firm Size on post-IPO returns.

4. **Subscription Level:** Subscription Level tended to exhibit negative coefficients, particularly in relation to CAR, suggesting that higher initial demand might not sustain positive long-term returns. This could be indicative of an overreaction phenomenon, where initial enthusiasm during the IPO subsides over time, resulting in lower returns (Aggarwal & Rivoli, 1990). While this trend is observable in the coefficient direction, the lack of statistical significance underscores that subscription level alone may not reliably predict sustained IPO performance on the LuSE.

### **5.3 Discussion of Results: Addressing Low R-Squared Values and Alternative Predictors**

In this section, we discussed the implications of low R-squared values observed in the regression analysis of IPO performance on the Lusaka Securities Exchange (LuSE) and explore potential alternative predictors that could yield more robust models.

#### **5.3.1 Implications of Low R-Squared Values**

An R-squared value represents the proportion of the variance in the dependent variable that is explained by the independent variables in a regression model. In the context of IPO performance, a low R-squared value suggests that the chosen variables do not fully explain the variation in IPO performance (measured by Cumulative Abnormal Returns (CAR) and Buy-and-Hold Abnormal Returns (BHAR)). While the R-squared value provides useful insights into model fit, it is important to understand its limitations and implications for our analysis.

#### **5.3.2 Market Inefficiencies in Emerging Markets:**

Low R-squared values can be a reflection of market inefficiencies inherent in emerging markets like LuSE. As noted in the literature on IPOs in emerging markets, inefficiencies such as information asymmetry, low liquidity, and speculative investor behaviour can result in substantial variations in IPO performance that are not easily captured by traditional firm-specific variables (Rock, 1986; Zingales, 1995).

In markets like LuSE, investor sentiment, herd behaviour, and limited institutional participation significantly influence IPO outcomes. These factors are often difficult to quantify, leading to a low proportion of variance explained by the chosen variables. This suggests that the market dynamics in LuSE are not fully reflected in the variables included in the regression model.

### **5.3.3 Inclusion of Behavioural and Psychological Factors:**

The low R-squared values may also reflect the absence of behavioural factors that can strongly influence IPO performance in emerging markets. Studies in Behavioural Finance (Barberis & Thaler, 2003), have exposed psychological biases, such as loss aversion, overconfidence and herding, play a critical role in IPO pricing and long-term performance. These behavioural aspects, although relevant, are difficult to quantify and as such are not typically captured in traditional regression models. As a result of this, the model may not capture the full range of factors influencing IPO performance, leading to a relatively low R-squared value.

Similarly, investor sentiment which is highly dynamic can shift rapidly in emerging markets, this may also contribute to price volatility but is not easily measured in regression models. Thus, the model may not fully explain variations in IPO returns because it omits these critical intangible factors.

### **5.3.4 Regulatory and Structural Limitations:**

The LuSE, like other exchanges in emerging markets are often beset with weak regulatory frameworks, limited market infrastructure, and low investor protections. These factors contribute to market inefficiencies that cannot be fully captured by traditional firm level variables. Market liquidity and regulatory quality can for instance significantly influence IPO performance, but these aspects are not included in the current model, this potentially leading to a mismatch between the regression model and the actual determinants of IPO performance.

The low R-squared values in the regression analysis reflect the complex and multifaceted nature of IPO performance, especially in emerging markets like LuSE. While the chosen variables Firm Size, Issue Size, Subscription Level, and Age of the Firm are important, they do not fully account for the broad range of factors influencing IPO outcomes.

### 5.3.5 Discussion of T-Statistics Results

The analysis of the T-statistics for CAR and MABHR offers valuable insights into the dynamics of IPO performance on the LuSE:

- I. **Significance of CAR T-Statistic:** The significant negative T-statistic for CAR (-3.39) highlights the idea that while initial enthusiasm may drive prices up immediately following the IPO, this enthusiasm is not sustained. The results indicate that if investors hold onto their shares beyond the initial post-IPO period, they could experience losses. This highlights the difficulty in evaluating the true value of newly listed companies, suggesting that investor sentiment can drive initial returns, this aligns with Behavioural Finance Theory posits that prices may be inflated shortly after an IPO and may not be sustainable over time
- II. **Lack of Significance in MABHR T-Statistic:** The near-zero T-statistic for MABHR (0.29) indicates that, on average, IPOs do not provide superior returns relative to the broader market over the longer term. This supports the concept that initial performance should be considered with caution, as it may not predict future performance. For Investors they may need to engage in diversification of portfolios or focusing on fundamental analyses of firms, to achieve better investment outcomes. This indicates that IPOs on LuSE do not show sustained long-term gains, consistent with the Efficient Market Hypothesis (EMH), which posits that prices stabilize over time as information becomes fully reflected in stock prices

## 5.4 Comparison with Empirical Literature

### 5.4.1 Under-pricing in IPOs; Findings from the Study:

The study on IPO performance on the LuSE reveals a pattern of significant short-term under-pricing, consistent with the global trend of IPOs being priced below their true market value at the time of listing. Specifically, CAR and BHAR show initial positive returns, followed by corrections as market sentiment normalizes.

#### 5.4.1.1 Comparison with African Market Studies:

- **Johannesburg Stock Exchange (JSE):** Similar to the findings, studies on the JSE (e.g., Govindjee & Sibanda, 2021) show significant under-pricing in the short term, although the magnitude is typically higher compared to LuSE due

to the larger scale and liquidity of the JSE. In their study, initial returns on IPOs averaged 15%, with subsequent long-term underperformance aligning with the observed pattern on LuSE.

➤ **Nairobi Securities Exchange (NSE):**

Wachira (2012) found that IPOs on the NSE were also heavily under-priced, with early returns exceeding 10%. Like the LuSE, IPOs on the NSE failed to maintain their gains over the long term. This suggests that IPOs in African markets, including LuSE, are susceptible to similar dynamics of speculative enthusiasm during the IPO phase, followed by price corrections.

**5.4.1.2 Comparison with Emerging Markets:**

➤ **India (BSE and NSE):**

Studies on the Bombay Stock Exchange (BSE) and National Stock Exchange (NSE) (Agarwal et al., 2010) show consistent findings of short-term underpricing, though the magnitude is often larger in India due to higher retail investor participation and market excitement. However, as with LuSE, long-term performance is weaker, with IPO stocks underperforming market benchmarks in the 4-year post-IPO window.

➤ **Malaysia:**

Research by Ahmad and Jelic (2014) on Malaysian IPOs revealed that underpricing is a common feature, especially during “hot market conditions.” However, like this study, long-term underperformance is observed, suggesting that underpricing is often followed by corrections in subsequent years.

**5.4.1.2.1 Implications:**

The findings on IPO underpricing are consistent with those from other African markets and emerging economies. This indicated that behavioural factors (such as speculative demand and investor sentiment) and market inefficiencies (due to low liquidity and weak regulations) are global drivers of underpricing in IPOs, particularly in emerging markets.

**5.4.2. Long-Term IPO Performance; Findings from the Study:**

The long-term performance of IPOs on LuSE shows significant underperformance, as measured by CAR and BHAR over four years post-IPO. This suggests that after the

initial price surge, LuSE IPOs tend to converge towards market returns or even underperform the broader market.

#### **5.4.2.1 Comparison with African Market Studies:**

- **Ghana Stock Exchange (GSE):** Mensah (2008) found that IPOs on the GSE also exhibit long-term underperformance relative to the broader market. The long-term returns for IPOs on the GSE were statistically lower than expected, driven by similar factors such as market inefficiencies and the dominance of retail investors, a pattern also observed on the LuSE.
- **Nairobi Securities Exchange (NSE):** As observed by Wachira (2012), IPOs on the NSE experienced initial under-pricing but showed long-term underperformance in the years following the IPO. This trend mirrors the findings of this study on the LuSE, suggesting that long-term performance in emerging African markets tends to be weak post-IPO.

#### **5.4.2.2 Comparison with Emerging Markets:**

- **South-East Asia:** Studies by Low et al. (2008) on IPOs in South-East Asia indicate that long-term IPO performance often falls short of market expectations, with many IPOs underperforming the market benchmarks over 3-5 years post-listing. This supports the notion that, globally, IPOs tend to underperform in the long term, especially when market speculation drives initial pricing.
- **China and India:** In China and India, long-term IPO performance has been similarly poor, as seen in studies by Agarwal et al. (2010). Like the LuSE, institutional participation is low in these markets, leading to market inefficiencies and information asymmetry. Consequently, IPOs that are initially under-priced experience subsequent corrections, leading to long-term underperformance.

This study's findings regarding long-term underperformance align closely with the experiences of other emerging markets. In African markets like LuSE, and in broader emerging economies, market inefficiencies, regulatory limitations, and behavioural biases contribute to a pattern of long-term underperformance in IPOs.

#### **5.4.3. Market Efficiency and Liquidity Constraints; Findings from the Study:**

The low explanatory power of the regression models suggests that other factors beyond traditional firm-specific variables (Firm Size, Issue Size) drive IPO

performance. This highlights the inefficiency of the market in pricing IPOs accurately, which is often attributed to low liquidity, speculative behaviour, and a lack of institutional participation.

#### **5.4.3.1 Comparison with African Market Studies:**

- **Johannesburg Stock Exchange (JSE):** Studies on the JSE (Govindjee & Sibanda, 2021) also indicate that despite the relatively high level of market liquidity and investor sophistication compared to other African exchanges, inefficiencies persist due to speculative behaviour and herd mentality, particularly during hot market periods. Although market efficiency is higher on JSE than on LuSE, similar issues of information asymmetry and speculative trading affect IPO pricing.

#### **5.4.3.2 Comparison with Emerging Markets:**

- **Emerging Asian Markets (India, Malaysia, China):** Similar inefficiencies are observed in emerging Asian markets, where market depth is often limited, and liquidity constraints are significant. Ahmad and Jelic (2014) show that IPO performance in Malaysia suffers from market inefficiency due to speculative demand and limited institutional support. The Winner's curse, where early investors overpay due to inflated expectations, is a recurring phenomenon, much like what is observed on The LuSE. Low liquidity and investor behaviour drive this inefficiency which mirrors the issues seen in other emerging markets, where IPO prices are often influenced more by speculation than by fundamental value.

The inefficiencies observed on the LuSE are consistent with those seen in other emerging markets, especially those with lower liquidity and investor participation. Low institutional involvement and limited regulatory oversight contribute to market mispricing, further exacerbating the long-term underperformance of IPOs.

The results of this study largely align with findings from both African markets (such as the JSE, NSE, and GSE) and other emerging markets (such as India, Malaysia, and South-East Asia). The consistent patterns of short-term underpricing, followed by long-term underperformance, reflect common challenges in IPO markets, particularly in emerging economies. These challenges include market inefficiencies, information

asymmetry, speculative behaviour, and low liquidity, all of which contribute to the mispricing of IPOs and the eventual correction of stock prices post-listing.

This study's findings on LuSE add to the broader understanding of IPO dynamics in emerging markets and suggest that improving market efficiency, liquidity, and investor education could help mitigate these issues. The study also underscores the need for further research that includes broader macroeconomic factors, investor sentiment, and regulatory quality to explain IPO performance more fully in emerging markets like LuSE.

## **5.5 Interpretation of Findings**

### **5.5.1 Short-Term Under-pricing of IPOs on LuSE**

The study revealed that IPOs on the Lusaka Securities Exchange (LuSE) experience significant short-term under-pricing, as reflected in the positive Abnormal Returns (AR) and Buy-and-Hold Abnormal Returns (BHAR) over the initial year post-IPO. This phenomenon is consistent with the broader literature on IPO under-pricing, particularly in emerging markets.

The under-pricing of IPOs on LuSE can be attributed to several factors, which align with findings from African and emerging market studies reviewed in Chapter Two. One key reason for this under-pricing is information asymmetry, where the issuer possesses superior knowledge about the company's true value compared to investors, leading to pricing below intrinsic value (Rock, 1986). On LuSE, where market inefficiencies are prevalent due to low liquidity, limited regulatory oversight, and a lack of comprehensive investor education, issuers may deliberately under-price their shares to ensure that the IPO is fully subscribed. This is done to overcome the scepticism of investors, who may be unsure about the company's prospects, given the limited information available in the market.

Behavioural Finance Theory also helps explain this short-term under-pricing. As investors in emerging markets like LuSE tend to be more speculative and less informed (Barberis & Thaler, 2003), IPOs often attract retail investors who are driven by herd behaviour and overconfidence, pushing up demand during the offering. This speculative demand results in initial gains, but these are typically unsustainable once the market adjusts to the true value of the stocks.

### **5.5.2 Long-Term Underperformance of IPOs on LuSE**

The key finding of long-term underperformance in the IPOs on the LuSE, as measured by the negative CAR and MABHAR beyond the first year, aligns closely with findings from previous studies on emerging markets.

Long-term underperformance on the LuSE IPOs can be linked to several factors, many of which were discussed in the literature. Market inefficiencies, as highlighted by Information Asymmetry Theory, plays a significant role in IPO pricing. The limited depth of the market and low participation by institutional investors prevent IPO stocks from being accurately priced in the long run. Barberis and Thaler (2003) observe that retail investors in emerging markets often prioritize short-term gains, leading to the initial overvaluation of IPOs. As speculation decreases and rational pricing prevails, stock prices often correct, leading to long-term underperformance.

In addition, the lack of market liquidity on the LuSE worsens the issue. IPO stocks are likely to encounter significant volatility in markets with low liquidity. The lack of a broad base of institutional investors heightens this volatility, as retail investors often rely on sentiment over fundamentals, resulting in long-term underperformance.

These findings also echo the global phenomenon of IPO post-IPO corrections. As seen in studies on the Ghana Stock Exchange (GSE) and Nairobi Securities Exchange (NSE), IPOs in emerging markets often face initial overvaluation, which is corrected as the market gathers more information and the stock price aligns with its true value (Mensah, 2008; Wachira, 2012).

### **5.5.3. Low Explanatory Power of the Regression Model (Low R-Squared Values)**

The regression analysis revealed low R-squared values, indicating that the chosen firm-specific variables (Firm Size, Issue Size, Subscription Level, and Age of the Firm) do not adequately explain variations in IPO performance.

The low R-squared values highlight the challenges of using traditional firm-specific variables to explain IPO performance in LuSE's emerging market. This finding aligns with literature on emerging markets, which shows that market sentiment, investor behaviour, and macroeconomic conditions significantly impact IPO outcomes, though they are challenging to quantify in regression models (Barberis & Thaler, 2003; Zingales, 1995). The Behavioural Finance perspective shows that psychological

biases and herd behaviour significantly impact IPO performance, but traditional regression models struggle to capture these factors.

Market inefficiencies on LuSE, such as low liquidity and limited investor education, also contribute to the low explanatory power of the regression model. In less efficient markets, IPOs are often mispriced due to factors such as speculative demand and gaps in information, which are challenging to quantify. While firm specific factors like Firm Size and Issue Size are important, they do not capture the complete range of influences on IPO performance, especially in markets characterized by higher levels of uncertainty and inefficiency.

#### **5.5.4. Behavioural and Market-Specific Factors Influencing IPO Performance on the LuSE**

The findings of this study reflect the impact of behavioural and market-specific factors in driving IPO performance on the LuSE, as indicated by the low explanatory power of traditional models and the under-pricing and long-term underperformance observed. These findings contribute to the understanding of IPO performance on the LuSE by highlighting the importance of investor behaviour and market inefficiencies in explaining IPO outcomes. Information Asymmetry Theory (Rock, 1986) and Signalling Theory (Leland & Pyle, 1977) suggest that the lack of information transparency in emerging markets leads to pricing discrepancies, which in turn affects both short-term and long-term performance. Market inefficiencies, low liquidity, and investor sentiment greatly impact IPO pricing on the LuSE, resulting in short-term under-pricing and long-term corrections.

The study highlights the necessity for regulatory enhancements and investor education at the LuSE to tackle existing inefficiencies. Strengthening market liquidity and increasing the participation of institutional investors could improve the efficiency of IPO pricing and reduce the speculative behaviour that drives short-term under-pricing and long-term underperformance.

The study contributes significantly to the understanding of IPO performance on the LuSE. The findings emphasize the role of market inefficiencies, behavioural factors, and investor sentiment in IPO performance. These insights are essential for improving the IPO process on the LuSE and guiding policy reforms to enhance market efficiency, liquidity, and investor education.

## **5.6 SUMMARY OF FINDINGS**

The study focused on two primary analyses to evaluate IPO performance:

1. **Multiple Regression Analysis:** Examined how firm-specific variables (Age of Firm, Issue Size, Firm Size, and Subscription Level) affected IPO performance metrics such as AR, BHAR, and CAR over four different years (2011, 2015, 2019, and 2023). Due to data limitations, the primary discussion centred on the 2023 results, with other years detailed in the appendix.
2. **Event Study Analysis:** Investigated short-term and long-term post-IPO performance by examining CAR and MABHR, and using T-statistics to assess the significance of these performance metrics. This analysis revealed significant underperformance in CAR, as well as the absence of statistically significant returns for MABHR, offering insights into both immediate and longer-term IPO returns.

The findings from the event study analysis suggest that investor sentiment and behavioural biases may play a role in early IPO performance, resulting in short-term price inflation. However, this enthusiasm is not sustained over time, reflecting the tenets of both Behavioural Finance and EMH. Investors in LuSE IPOs may experience initial losses if they continue holding shares beyond the early post-IPO period, signalling that early enthusiasm does not reliably predict long-term value.

Additionally, the results of the regression analysis combined with the event study findings suggest that traditional firm-specific factors like Age of Firm or Issue Size do not independently determine IPO success. Instead, factors such as market sentiment, economic conditions, and investor expectations may be more influential in driving IPO outcomes in emerging markets like the LuSE

### **5.6.1 Research Questions and Objectives**

#### **5.6.1.1 Long-Term Stock Price Performance of IPOs on the LuSE**

- Research Question 1 and Specific Objective 1 focused on understanding the long-term stock price performance of companies listed on the LuSE after an IPO.

The study revealed that the IPOs on the LuSE, on average, underperformed in the long term (as shown by the significant negative CAR T-statistic).

Additionally, the long-term performance of IPOs, reflected in the near-zero T-statistic for MABHR, suggested that these IPOs neither consistently outperformed nor underperformed the market when held over a longer period. The analysis highlighted initial over-performance following IPOs but indicated that, in the long run, LuSE IPOs do not yield abnormal returns relative to the broader market. These findings align with the Efficient Market Hypothesis (EMH), which suggests that stock prices tend to reflect all available information over time, leading to average market performance.

#### **5.6.1.2 Factors Driving Long-Term Stock Price Changes Post-IPO**

- Research Question 2 and Specific Objective 2 aimed to identify factors contributing to long-term changes in stock prices following an IPO on the LuSE. The regression analysis revealed that firm-specific variables (Age of Firm, Issue Size, Firm Size, and Subscription Level) had low explanatory power, with low R-squared values and statistically insignificant results. This suggests that these traditional variables were not strong predictors of long-term IPO performance on the LuSE. The weak relationship between these variables and IPO performance metrics may be due to other unaccounted-for factors, such as broader economic conditions, regulatory policies, or investor sentiment, which were not part of this study.

This question has been partially answered. While the factors initially hypothesized did not show significant effects on long-term stock price changes, the findings highlight the need to investigate additional market-wide or macroeconomic factors for a fuller understanding.

#### **5.6.1.3 Influence of Market Dynamics and Investor Behaviour on IPO**

##### **Performance**

- Research Question 3 and Specific Objective 3 examined how market dynamics and investor behaviour affect the long-term performance of IPOs.

The event study analysis, particularly the CAR T-statistic, suggested that investor sentiment likely influences IPO performance in the long term, with prices initially reflecting heightened enthusiasm that subsides over time. This aligns with Behavioural Finance Theory, which suggests that psychological factors and market sentiment drive initial IPO performance, which later corrects as investors reassess value. However, the study found no evidence of

sustained long-term abnormal returns, indicating that, over time, IPO performance aligns with the broader market, as suggested by the EMH.

This question was largely addressed. The analysis demonstrated that market dynamics, particularly investor sentiment, impact long-term performance. Additionally, the Efficient Market Hypothesis explains long-term stabilization, as the IPOs did not demonstrate significant sustained abnormal returns.

#### **5.6.1.4 Hypotheses**

- **Null Hypothesis (H0):** The stock prices of companies listed on the LuSE do not show a statistically significant change in the long term after an IPO.
- **Alternative Hypothesis (H1):** The stock prices of companies listed on the LuSE show a statistically significant change in the long term after an IPO.

The event study analysis and the MABHR T-statistic provided insight into this hypothesis. The near-zero T-statistic for MABHR suggests that, on average, IPOs on the LuSE do not show a statistically significant long-term change in returns relative to the market. This finding supports the Null Hypothesis (H0), indicating that the long-term performance of LuSE IPOs does not significantly diverge from overall market performance, consistent with EMH predictions.

## CHAPTER 6

### CONCLUSIONS AND RECOMMENDATIONS

#### 6.1 INTRODUCTION

This chapter outlines key findings from the research on IPO performance on the LuSE and their implications. It highlights potential solutions for improving market performance, enhancing investor education, and strengthening regulatory frameworks. The chapter concludes with main themes from the study and offers practical recommendations for future research.

#### 6.2 CONCLUSIONS

This research aimed to analyse the performance of IPOs on the LuSE, focusing on key variables that influence both short-term and long-term performance. The study also sought to identify the factors contributing to IPO under-pricing and subsequent underperformance, particularly in the context of an emerging market like the LuSE. The findings from this study provide valuable insights into the dynamics of IPOs in Zambia and have important implications for policymakers, investors, and regulators.

#### **Key findings of the study include:**

##### **I. Short-Term Under-pricing:**

One of the key findings of this study is that IPOs on the LuSE show significant short-term under-pricing. This conclusion is supported by the positive AR and BHAR observed shortly after the IPOs. This pattern aligns with trends seen in other emerging markets, where speculative behaviour and investor sentiment often lead to initial overpricing. Retail investors, in particular, are frequently influenced by the excitement and perceived opportunities associated with investing in IPOs. This enthusiasm can create demand that surpasses the stocks' intrinsic value during the offering period. Consequently, this overreaction tends to result in an initial spike in stock prices that is ultimately unsustainable over the long term.

## II. **Long-Term Underperformance:**

The second major finding is the long-term underperformance of IPOs on the LuSE, as measured by the negative CAR and MABHAR beyond the first year. This trend highlights the potential for initial overvaluation due to market inefficiencies and information disparities. Both emerging and developed markets often encounter price corrections after IPOs. In the case of the LuSE, after the initial speculative frenzy subsides, the prices of IPO stocks often revert to more realistic levels, resulting in underperformance compared to broader market indices.

## III. **Market Inefficiencies:**

The regression analysis revealed low R<sup>2</sup> values, indicating that the firm-specific variables (i.e., Firm Size, Issue Size, Subscription Level, and Age of the Firm) alone cannot fully explain the variation in IPO performance. This indicates that factors like market sentiment, investor behaviour, and macroeconomic conditions significantly influence IPO outcomes, but these elements were not included in the regression model.

In emerging markets such as the LuSE, market inefficiencies—like low liquidity and limited investor sophistication—greatly contribute to the mispricing of IPO stocks. As highlighted in the literature, these inefficiencies prevent the accurate pricing of IPOs, leading to under-pricing in the short term and underperformance over the long term.

## IV. **Information Asymmetry and Speculative Behaviour:**

Information asymmetry, where issuers have better information about their companies than the investors, is a significant factor in driving IPO under-pricing. The findings suggest that retail investors on the LuSE are particularly susceptible to speculative behaviour resulting from a lack of transparency, weak regulatory framework and limited investor education, retail investors on the LuSE are particularly inclined to speculative behaviour.

This behaviour is further aggravated by herding tendencies, where investors follow the crowd without fully analysing the underlying value of the stock. As a

result, IPO prices often become inflated during the initial offering period and later correct as investors realize the stocks are overpriced.

#### V. **Behavioural Factors and Investor Sentiment:**

The influence of behavioural factors in IPO performance is clear in the speculative demand and subsequent price corrections observed on the LuSE. Investors, driven by psychological biases such as herding and overconfidence, contribute to the overvaluation of IPO stocks. This speculative behaviour results in initial under-pricing but is often followed by corrections as more rational market forces prevail. The limited involvement of institutional participation and the dominance of retail investors contribute to these inefficiencies, reinforcing the idea that investor sentiment plays a critical role in driving IPO performance in emerging markets like the LuSE.

### **6.2 RECOMMENDATIONS**

Based on the findings of this study, several actionable recommendations are made for policymakers, regulators, and market participants to improve the efficiency, transparency, and stability of the IPO market on LuSE. These recommendations aim to address the key challenges identified in the study, including information asymmetry, speculative behaviour, and market inefficiencies.

#### **1. Regulatory Reforms and Enhanced Transparency:**

- **Stricter Disclosure Standards:** Regulatory bodies need to enforce stricter disclosure requirements for IPO firms to address the issue of information asymmetry. Issuers should be required to provide transparent, detailed and accurate information about their financial health, risk factors, future projections and other material information. This would reduce the uncertainty faced by investors, allowing them to make more informed decisions. A comprehensive disclosure of IPO pricing methodology would also improve market transparency and lessen speculative pricing
- **Regulatory Oversight:** Improving regulatory oversight is crucial for ensuring that firms adhere to best practices in governance and reporting. Regulators should monitor IPOs closely to prevent price manipulation

and ensure that companies adhere to regulatory standards. This monitoring should include enforcing stricter reporting requirements and ensuring that the information provided to investors is clear, consistent, and timely.

## 2. Promoting Investor Education and Protection:

- **Financial Literacy Programs:** To lessen speculative behaviour and enhance rational decision making, education of investors is of vital importance. It should be a priority for policymakers to educate investor with financial literacy programs that aim at educating retail investors about the risks of investing in IPOs, the importance of analysing company fundamentals, and the dangers of speculative trading. These programs should be designed to improve investor's understanding of key concepts such as valuation, market volatility, and long-term investment strategies.
- **Investor Protection:** In addition to education programs, regulators should implement measures to protect investors from making ill-informed decisions due to speculative trading. This could include cool-off periods between the IPO launch and the ability to buy or sell IPO stocks in the secondary market, this to curtail impulsive decisions and allow investors time to digest all available information. an additional measure could be the introduction of investor compensation schemes to safeguard retail investors from significant losses caused by price manipulation or market volatility.

## 3. Encouraging Institutional Investor Participation:

- **Incentivizing Institutional Investors:** Policymakers should develop strategies to enhance the involvement of institutional investors in IPOs. Institutional investors play a vital role in stabilizing the market and improving price discovery. Their involvement would not only improve the pricing efficiency but also increase market liquidity and bring more stability to the post-IPO market. Such policies could include tax incentives, preferred access to IPOs, or regulatory exemptions to encourage institutional capital to enter the IPO market.

- **Developing Market Liquidity:** Enhancing market liquidity is crucial for facilitating the smooth trading of IPO stocks. Policies designed to improve liquidity might include establishing a market-making program, where designated institutions commit to continuously buying and selling IPO stocks. This would help maintain orderly trading and reduce volatility. Furthermore, introducing secondary market instruments, such as ETFs that focus on IPO stocks, could provide investors with easier access to liquidity.

#### 4. **Strengthening Corporate Governance:**

- **Promoting Good Governance Practices:** Strong corporate governance is essential for the stability of IPOs and the long-term performance of the market. Regulatory bodies should encourage companies to adopt effective governance frameworks, including independent boards, transparent auditing processes, and comprehensive risk management practices. These measures will help mitigate speculative behaviour associated with IPOs and enhance the long-term success of newly listed firms.

### 6.3 SUGGESTIONS FOR FUTURE RESEARCH

While this study contributes insights into IPO performance on the LUSE, there are several avenues for further research that could expand on these findings and provide deeper insights into the dynamics of IPO markets in emerging economies.

#### 1. **Behavioural Factors and Investor Sentiment:**

- Future research could examine how investor sentiment and psychological biases impact IPO pricing and long-term performance on the LuSE. Using sentiment analysis tools or surveys could provide insights into the effects of herding behaviour and overconfidence on IPO outcomes.

#### 2. **Macroeconomic Variables and IPO Performance:**

- Integrating additional macroeconomic factors such as interest rates, inflation and Gross Domestic Product growth into regression models would help assess how broader economic conditions influence IPO

performance. This would provide a more rounded view of the factors that drive IPO returns in emerging markets like the LuSE.

### **3. Long-Term Performance of Institutional vs. Retail Investors:**

- Further studies could compare the long-term performance of IPO stocks in markets with high levels of institutional participation versus those dominated by retail investors. Understanding the role of institutional investors in improving price stability and long-term performance would offer useful insights for policymakers looking to improve the IPO process.

### **4. Cross-Market Comparative Studies:**

- Comparative studies across multiple African markets (such as Nairobi, Johannesburg, and Lagos) would provide valuable insights into how market characteristics, regulatory frameworks, and investor behaviour vary across emerging markets. Such studies could help identify best practices for improving IPO markets in other regions.

In conclusion, this study provides a comprehensive understanding of IPO performance on the Lusaka Securities Exchange (LuSE). The findings highlight the importance of regulatory reforms, investor education, and institutional involvement in improving market efficiency, transparency, and long-term IPO performance. By implementing the recommended reforms and addressing the challenges identified in this study, LuSE can create a more efficient and transparent market, benefiting both issuers and investors alike.

Future research will continue to play a critical role in enhancing the understanding of IPO dynamics in emerging markets. As the LuSE continues to evolve, ongoing research into behavioural factors, macroeconomic influences, and market liquidity will be essential in shaping the future of the Zambian IPO market.

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## Appendix 1 Raw Data

Name of Firm	Age of Firm	Issue Size "billions"	Firm Size "billions"	Subscripti on Level	2011			2015			2019			2023			
					AR	BHAR	MBHAR	AR	BHAR	MBHAR	AR	BHAR	MBHAR	AR	BHAR	MBHAR	CAR
Airtel Network	11	7207	360.36	1.5	4.9036	4.3968	4.9036	-459.0138	4.2333	-454.7502	-2.9138	3.681	0.8727	0.4572	5.9048	5.8869	-456.6669
Copperbelt Energy	55	24.2	96.8	1	-0.3364	-0.8432	-0.3364	-458.9836	-0.8432	-459.8267	-2.6633	-0.8205	-3.6287	8.7289	0.75	0.7321	-453.2544
Shoprite Holdings	8	0.07	12.8	0.975	19.1943	18.6875	19.1943	-458.9836	18.6875	-440.2961	-2.8082	18.6875	15.8793	-0.002	19	18.9821	-442.6996
ZCCM/H	30	0.48	1.737906	0.95	34.229	33.7222	34.229	-456.7836	110.1111	-348.8724	-3.096	78.1389	75.3306	0.6511	131.0833	131.0654	-424.9995
ZANACO	39	46.55	173.7033	0.99	-0.4294	-0.9362	-0.4294	-456.1836	-0.7574	-459.741	-3.3696	-0.8836	-3.7019	11.9621	0.3809	0.3629	-448.0205
ZAFFCO	38	12.52	31.312	0.875	0	0	0	0	0	0	0	0	0	2.5121	0.2282	0.2102	2.5121
Puma	5	0.62	2.5	1	0.7068	0.2	0.7068	-459.1502	0	-458.9836	-2.8782	-0.07	-2.8782	2.2187	2.01	1.9921	-459.103
ZAMEFA	36	0.26	1.46286	0.99	32.8401	32.3333	32.8401	-458.9836	32.3333	-426.6502	-2.8502	30.9333	28.1251	0.028	32.4	32.3821	-428.9657
Zambrew	34	0	0.0442	0.934	574.5068	574	574.5068	-458.9053	619	160.0164	-2.5824	759	756.1918	-0.6495	279	278.9821	112.3695
Lararge	46	1.64	5.876001	0.95	39.4298	38.9231	39.4298	-459.4248	21.3077	-437.6759	-3.6358	2.8462	0.0379	4.5861	20.5538	20.5359	-419.0447
Zambia Sugar	36	1.3	21.38967	1	61.4159	60.9091	61.4159	-459.4285	33.3636	-425.6199	-3.1469	21.7273	18.919	12.9821	317.1818	317.1639	-388.1774
British American Tobacco	32	0.39	2.064305	0.93	13.8818	13.375	13.8818	-459.0009	13.125	-445.8686	-3.4897	3.5	0.6918	0.271	4.8	4.7821	-448.3379

## APPENDIX 2

### Regression Model Output

AR 2011

#### SUMMARY OUTPUT

<i>Regression Statistics</i>	
Multiple R	0.312367078
R Square	0.097573191
Adjusted R Square	-
Standard Error	192.4900674
Observations	12

#### ANOVA

	<i>df</i>	<i>SS</i>	<i>MS</i>	<i>F</i>	<i>Significance F</i>
Regression	4	28043.56429	7010.891072	0.189215439	0.936557906
Residual	7	259366.9824	37052.42606		
Total	11	287410.5467			

	<i>Coefficients</i>	<i>Standard Error</i>	<i>t Stat</i>	<i>P-value</i>
Intercept	815.6684247	2239.989881	0.364139335	0.726504523
Age of Firm	1.21159127	4.706493042	0.257429738	0.804250508
Issue Size	-21.85853495	42.18167613	-0.518199772	0.620290445
Firm Size Subscription	5.389641073	11.77106643	0.457871944	0.660918386
Level	-808.8705219	2323.303966	-0.348155271	0.737958807

BHAR 2011

#### SUMMARY OUTPUT

<i>Regression Statistics</i>	
Multiple R	0.312367078
R Square	0.097573191
Adjusted R Square	-
Standard Error	192.4900674
Observations	12

#### ANOVA

	<i>df</i>	<i>SS</i>	<i>MS</i>	<i>F</i>	<i>Significance F</i>
Regression	4	28043.56429	7010.891072	0.189215439	0.936557906
Residual	7	259366.9824	37052.42606		
Total	11	287410.5467			

	<i>Coefficients</i>	<i>Standard Error</i>	<i>t Stat</i>	<i>P-value</i>
Intercept	815.1616643	2239.989881	0.363913101	0.72666613
Age of Firm	1.21159127	4.706493042	0.257429738	0.804250508
Issue Size	-21.85853495	42.18167613	0.518199772	0.620290445
Firm Size	5.389641073	11.77106643	0.457871944	0.660918386
Subscription Level	-808.8705219	2323.303966	0.348155271	0.737958807

AR 2015

SUMMARY  
OUTPUT

<i>Regression Statistics</i>	
Multiple R	0.442535839
R Square	0.195837969
Adjusted R Square	0.263683192
Standard Error	148.8320455
Observations	12

<i>ANOVA</i>					
	<i>df</i>	<i>SS</i>	<i>MS</i>	<i>F</i>	<i>Significance F</i>
Regression	4	37761.0683	9440.267081	0.426178347	0.785984422
Residual	7	155056.844	22150.97777		
Total	11	192817.913			

	<i>Coefficients</i>	<i>Standard Error</i>	<i>t Stat</i>	<i>P-value</i>
Intercept	165.9094806	1731.94534	0.095793716	0.926369147
Age of Firm	-1.286867342	3.63902925	0.353629293	0.734027862
Issue Size	6.022553942	32.6145927	0.18465826	0.858733077
Firm Size	-0.646296011	9.10131062	0.071011312	0.945374965
Subscription Level	-584.1754242	1796.36324	0.325198941	0.75453442

BHAR 2015

SUMMARY  
OUTPUT

<i>Regression Statistics</i>	
Multiple R	0.293873776
R Square	0.086361796
Adjusted R Square	-0.435717177
Standard Error	210.1285146
Observations	12

ANOVA

	<i>df</i>	<i>SS</i>	<i>MS</i>	<i>F</i>	<i>Significance F</i>
Regression	4	29215.64213	7303.910531	0.165419028	0.949313544
Residual	7	309077.9486	44153.99265		
Total	11	338293.5907			

	<i>Coefficients</i>	<i>Standard Error</i>	<i>t Stat</i>	<i>P-value</i>
Intercept	785.656185	2445.24693	0.321299324	0.75736427
Age of Firm	0.955087139	5.137763237	0.185895514	0.857798873
Issue Size	-20.32933363	46.04691072	-0.4414918	0.672172802
Firm Size	4.95656021	12.84968486	0.38573399	0.711148507
Subscription Level	-760.3815661	2536.195336	-0.29981191	0.773027667

AR 2019

SUMMARY  
OUTPUT

<i>Regression Statistics</i>	
Multiple R	0.220391256
R Square	0.048572306
Adjusted R Square	-0.495100662
Standard Error	0.408538521
Observations	12

ANOVA

	<i>df</i>	<i>SS</i>	<i>MS</i>	<i>F</i>	<i>Significance F</i>
Regression	4	0.059645406	0.014911351	0.089341035	0.982883992
Residual	7	1.168326061	0.166903723		
Total	11	1.227971466			

	<i>Coefficients</i>	<i>Standard Error</i>	<i>t Stat</i>	<i>P-value</i>
Intercept	-4.053087082	4.754126614	-0.85254084	0.422121993
Age of Firm	-0.003717583	0.009989002	-0.37216757	0.720779388
Issue Size	0.020218469	0.089525864	0.225839423	0.827778588
Firm Size	-0.005862088	0.024982765	-0.23464529	0.821199808
Subscription Level	1.217887148	4.930951389	0.246988269	0.812004513

BHAR 2019

SUMMARY OUTPUT

<i>Regression Statistics</i>	
Multiple R	0.26215783
R Square	0.06872673
Adjusted R Square	0.46342942
Standard Error	261.490034
Observations	12

ANOVA

	<i>df</i>	<i>SS</i>	<i>MS</i>	<i>F</i>	<i>Significance F</i>
Regression	4	35322.9433	8830.73583	0.1291476	0.96690097
Residual	7	478639.267	68377.0382	8	4
Total	11	513962.211			

	<i>Coefficients</i>	<i>Standard Error</i>	<i>t Stat</i>	<i>P-value</i>
Intercept	973.8638156	3042.936394	0.320040806	0.758278398
Age of Firm	0.879572284	6.393581992	0.137571128	0.894452901
Issue Size	-23.62344721	57.30211486	-0.41226135	0.692480479

Firm Size	5.863028362	15.99052154	0.366656481	0.724707444
Subscription Level	-948.867288	3156.115236	-0.300644057	0.772418894

AR 2023

SUMMARY  
OUTPUT

<i>Regression Statistics</i>	
Multiple R	0.558730054
R Square	0.312179273
Adjusted R Square	-
Standard Error	5.170542319
Observations	12

ANOVA

	<i>df</i>	<i>SS</i>	<i>MS</i>	<i>F</i>	<i>Significance F</i>
Regression	4	84.93741528	21.23435382	0.794267616	0.56474881
Residual	7	187.1415551	26.73450787		
Total	11	272.0789704			

	<i>Coefficients</i>	<i>Standard Error</i>	<i>t Stat</i>	<i>P-value</i>
Intercept	35.01883087	60.16914341	0.582006472	0.57881615
Age of Firm	0.119073447	0.126422738	0.94186733	0.377620763
Issue Size	-0.477472139	1.133056601	-0.421401842	0.686099947
Firm Size	0.161353954	0.316186689	0.510312292	0.62552642
Subscription Level	-38.11792912	62.40707187	-0.610795026	0.560636308

BHAR 2023

SUMMARY  
OUTPUT

<i>Regression Statistics</i>	
Multiple R	0.601356857
R Square	0.36163007
Adjusted R Square	-0.003152747
Standard Error	113.9587678
Observations	12

## ANOVA

	<i>df</i>	<i>SS</i>	<i>MS</i>	<i>F</i>	<i>Significance F</i>
Regression	4	51497.44031	12874.36008	0.991357193	0.470930573
Residual	7	90906.20532	12986.60076		
Total	11	142403.6456			

	<i>Coefficients</i>	<i>Standard Error</i>	<i>t Stat</i>	<i>P-value</i>
Intercept	1181.619926	1326.128096	0.891030006	0.402499141
Age of Firm	1.969560951	2.786357525	0.706858662	0.502499004
Issue Size	-35.47344927	24.97257079	-1.420496495	0.198436677
Firm Size	8.858496128	6.968755553	1.271173319	0.244275357
Subscription Level	-1215.89229	1375.452046	-0.883994679	0.40603525

## CAR

SUMMARY  
OUTPUT

<i>Regression Statistics</i>	
Multiple R	0.354545602
R Square	0.125702584
Adjusted R Square	-0.373895939
Standard Error	227.5028816
Observations	12

## ANOVA

	<i>df</i>	<i>SS</i>	<i>MS</i>	<i>F</i>	<i>Significance F</i>
Regression	4	52090.29952	13022.57488	0.251607197	0.899823481
Residual	7	362302.9281	51757.56116		
Total	11	414393.2276			

	<i>Coefficients</i>	<i>Standard Error</i>	<i>t Stat</i>	<i>P-value</i>
Intercept	1012.543649	2647.430901	0.38246273	0.713465709
Age of Firm	0.040079793	5.562576521	0.007205257	0.99445213
Issue Size	-16.29323468	49.8542756	0.326817198	0.753361277
Firm Size	4.898836928	13.91215437	0.352126407	0.735106253
Subscription Level	-1429.945988	2745.899329	0.520756887	0.618597979