ACTIVE BEAR, PASSIVE BULL: A COMPARATIVE ANALYSIS OF ACTIVE AND PASSIVE INVESTING DURING BULL AND BEAR MARKET RUNS IN SOUTH AFRICA

Dylan Naicker

(NCKDYL002)

Research dissertation presented for the approval of the University of Cape Town Senate in fulfilment of part of the requirements for the degree of Master of Commerce (Specialising in Financial Reporting, Analysis and Governance) in approved courses and a minor dissertation. The other part of the requirement for this qualification was the completion of a programme of courses.

I hereby declare that I have read and understood the regulations governing the submission of Master of Commerce dissertations, including those relating to length and plagiarism, as contained in the rules of the University, and that this dissertation conforms to those regulations.

SUPERVISOR: Mr Carlos de Jesus

(January 2024)

1. Abstract

Purpose

This dissertation aims to evaluate whether actively managed portfolios achieve greater returns than passively managed portfolios. Previous studies relating to active versus passive investing have had mixed results. This study builds on the limitations of earlier studies by extending the time frame and eliminating survivorship bias. In addition, the analysis evaluated the South African markets' level of information efficiency using the efficient market hypothesis.

Methodology

The portfolios used within the study are self-derived, and the weightings are rebalanced to allow new entrants to enter the market. This study will make use of a unit trust portfolio as the proxy for active investing and the portfolio of ETFs as the proxy for passive investing . Bull and bear markets were used in this study to determine distinct market conditions to measure the performance of the portfolios in different conditions. Bull and Bear markets are determined by comparing one standard deviation above and below the average market return using the CAPM model. The identified unit trust was further divided into its investing strategy (Value or non-Value investing strategies) and tested against the ETF portfolio to determine which investing strategy performs better. F-tests, t-tests and the Sharpe ratio was then used to analyse the returns of the portfolios during the identified market periods.

Findings

It was found that during both market periods, the actively managed portfolio outperformed the passively managed portfolio, which is contrary to the findings of prior literature. These findings highlight that the South African market is weak and inefficient according to the efficient market hypothesis.

Originality

This study built on the limitations of previous studies by first examining the portfolios over a more extended period to eliminate the shortcomings of previous research. This study offers an additional outlook into the performance of unit trusts by classifying them according to their investing nature, comprised of Value and non-Value funds, which will assist academics for further research and investors within the unit trust market.

Key words: Active management, Bull markets, Bear markets, Efficient market hypothesis, non-Value investing, Passive management, Value investing.

Plagiarism Declaration

COMPULSORY DECLARATION:

1. This dissertation has been submitted to Turnitin (or equivalent similarity and originality checking software) and I confirm that my supervisor has seen my report and any concerns revealed by such have been resolved with my supervisor.
2. I certify that I have received Ethics approval (if applicable) from the Commerce Ethics Committee.
3. This work has not been previously submitted in whole, or in part, for the award of any degree in this or any other university. It is my own work. Each significant contribution to, and quotation in, this dissertation from the work, or works of other people has been attributed, and has been cited and referenced.

Student number	NCKDYL002
Student name	Dylan Naicker
Signature of Student	Signed by candidate
Date:	09 February 2024

2. Acknowledgement

I would like to thank the following people who have helped me throughout this dissertation,

Supervisor

I would like to express my gratitude to my supervisor Mr. Carlos de Jesus for his continued support and advice. His feedback throughout this research paper was insightful and highly appreciated.

Family

I would like to express my gratitude to my parents, sister and cousins for always believing in me and motivating me to complete this dissertation.

My fellow academic trainees

I would like to express my gratitude to my fellow academic trainees all of whom have supported me to completion of this dissertation, a special acknowledgment goes to Mr. Evan Walker who would always set deadlines to ensure that we both complete our dissertations.

3. Table of Contents

Definitions and abbreviations

Active investing - A strategy whereby investors will contentiously buy and sell securities to outperform the market.

ASISA – Association for savings and investment South Africa

Index Fund – A type of mutual fund which is used to track and mimic components of a financial market index.

Mutual Fund – A type of fund that pools funds from various shareholders to invest in securities.

Passive investing is an investment strategy that looks to maximize the gains provided using a buy-and-hold strategy rather than trading.

Unit Trust - An unincorporated mutual fund that holds assets and distributes profits to holders instead of reinvesting profits into the fund.

ALSI – All Share Index

AMH – Adaptive Market Hypothesis

BRICS – an acronym which stands for Brazil, Russia, India, China, and South Africa

CAPM – Capital Asset Pricing Model.

EMH – Efficient Market Hypothesis

ETFs – Exchange Traded Fund

ETPs – Exchange-traded products consist of Exchange Traded Funds "ETFs" and Exchange Traded Notes "ETNs."

JSE – Johannesburg Stock Exchange

NAV – Net asset Value

S&P 500 – Standard and Poor's 500 Index

1. Introduction

More recently passive investing, mainly through Exchange-Traded Funds (ETFs), has experienced growing interest in the South African investment landscape (Hellström, Liu, & Sjögren, 2018; Van Loo & Molander, 2020). The Efficient Market Hypothesis (EMH) contends that consistent market outperformance by active management strategies over the long term is exceedingly challenging (Fama and French, 1970; Jandik, Madekler & Clarke, 2001). This has sparked a debate among investors regarding which investment option yields better returns. Literature indicates that studies have produced mixed results on whether active investment strategies or passive investment strategies are best. Often the debate is contingent on specific timeframes.

The economic environment substantially influences investment outcomes, with market conditions oscillating between bullish and bearish phases, each presenting unique challenges and opportunities. While rising stock prices and investor optimism characterize bull markets, bear markets bring about declines and a climate of caution. This study examines the performance of actively managed funds to ascertain whether they provide additional Value compared to passively managed funds under different market and economic conditions. As one of the key arguments for active management is the theoretical ability to minimise exposure in market down turns.

Given the ongoing debate between active and passive investing strategies, Han, Hirshleifer, Eisfeldt & Levin (2012); Ellis (2018); Cremers, Fulkerson and Riley (2019); Van Loo, Molander & Olsson (2020); D'Hondt, De Winne, Ghysels & Raymond, (2020);Easley, Michayluk, O'Hara & Putniņš, (2021); Aiken et al. (2022), and the increasing prevalence of passive investment strategies in the South African market, this raises a fundamental research question:

Does active portfolio management offer added Value during different economic conditions?

This question is central to a longstanding finance debate, delving into the effectiveness of active investment strategies compared to passive alternatives.

it's the answer to this question is significant practically for the South African investors, as well as testing one of the proposed benefits of active management. By assessing the performance of actively managed portfolios and their passive counterparts in the South African context, during different market conditions, this study aims to contribute meaningfully to the ongoing debate. Moreover, it provides valuable insights for investors, financial advisors, and fund managers seeking to optimize portfolio performance and make informed investment decisions. As understanding the relative strengths and weaknesses of active and passive investment strategies can assist individuals and financial professionals make more informed choices in the ever-shifting investment landscape.

This study aims to contribute to the literature by firstly updating the data to the latest time periods. Secondly by assessing by classifying active managers into different management styles, as well as assessing performance across different market conditions. This dissertation builds upon the findings of Heymans & Santana (2018), which determined that the JSE operates under a weak form of market efficiency. Building on this premise, it is predicted that actively managed portfolios will generate higher returns than passively managed portfolios. This study will make use of unit trusts as a proxy for actively managed investing strategy. The study also seeks to expand the understanding of the performance of active and passive investing strategies under different market conditions.

This dissertation further expands on the results of Van Loo and Molander's (2020) discovery that actively managed portfolios tend to outperform during market downturns while passively managed funds exhibit better performance during market upturns.

Lastly , this dissertation will add to the extant literature surrounding Value and non-Value investing by categorizing the identified unit trusts into Value and non-Value funds to further asset different active strategies compared to the ETF portfolio. This study will seek to enhance the findings of Hammar (2014) to determine if Value-investing funds produce higher returns than non-Value-focused funds compared to the ETF portfolio.

This remainder of this dissertation follows with an in-depth exploration of existing literature. Subsequently, the research method and procedures for data collection in testing will be elucidated. Thirdly, a presentation and analysis of the results obtained from the conducted tests will be provided. Finally, the discussion will culminate in a conclusive section, encompassing a summary and conclusion, which ends with areas for further research and the limitations of this dissertation.

2. Literature Review

In developing the research question, the review of literature starts by examining the efficient market hypothesis (EMH) debate, and analyze the research on EMH in emerging markets. The literature review will then investigate the prior findings on the debate between active versus passive management investment performance . The literature review will follow with the existing literature findings regarding the Value investing and non-Value investing debate, as well as literature around the market performance in bull and bear market periods. Lastly a brief analysis of existing literature to determine the research question and the relevance of this study.

2.1.1 Efficient Market Hypothesis (EMH)

The EMH was introduced by Fama (1970), which tested the efficiency of information within capital markets. Fama (1970) defined markets as information efficient if prices within the market reflect all information relating to their future Value at any point in time. The EMH considers different levels of information efficiency: weak form, semi-strong form and, finally, a strong form of information efficiency. Fama (1970) concluded that investors are unable to beat a market return if the market is information efficient since all information has already been incorporated into the market price.

Malkiel (2003) stated that markets are not efficient by providing evidence of the existence of profitable arbitrage opportunities within the market. If markets are assumed to be efficient, this perception indicates that active management is ineffective because managers do not have the information to enable them to outperform the market (Rickens, 2020).

Sewell (2011) through an in-depth analysis of existing literature, concluded that the word "fully" used in the definition of EMH is a stringent requirement, which suggests that no capital market would truly be efficient. EMH informs investors that security prices are adjusted to correctly reflect the arrival of new information (Muzhoba, 2021). EMH prevents investors from using public information to make abnormal gains since the new information is already included in the stock price.

According to EMH, as stock prices reflect all available information, it can be argued that a consistent return generation above the market-related returns is not possible. This claim agrees with the findings of (Jandik, Madekler & Clarke, 2001), which stated that an outperformance of the market is possible; however, it cannot happen consistently. These researchers concluded that the ability to outperform the market on a risk-adjusted level is more likely due to chance and cannot be repeated regularly.

2.1.1 EMH in emerging markets

Nguyen and Parsons (2014), through the statistical testing of 12 large stock markets, sought to determine if emerging markets are efficient. They concluded that emerging stock markets are generally inefficient due to the country's economic systems not allowing all market participants a free flow of information. Market participants can earn arbitrage profits in these inefficient markets, while other investors cannot make informed investing decisions due to a lack of accurate information.

Nazlioglu, Pazarci, Kar and Varol (2023) tested the EMH in emerging markets. The study considered both gradual shifts in markets and other common factors that affect the market prices of stocks. It was found that tests conducted with sharp breaks do not support the EMH, whereas testing for gradual shifts showed results that support EMH in emerging markets. It was discovered that in countries such as India, Mexico and the Philippines, stock prices could not be predicted using past prices, indicating the presence of the semi-strong form of the EMH (Nazlioglu et al., 2023).

Investors in emerging markets must cope with additional difficulties when making decisions regarding the management of their investments. Investors are encouraged to be conservative in their investment strategy due to the influence of socio-political factors on these markets. This practice encourages herding behaviour by investors when trading (Ahmed, Shafi & Nawab, 2022).

2.2. Active and passive investing

Following from the literary debate on market efficiency this subsection discussed active versus passive investing debate. In terms of EMH active management should not be able to outperform passive investments in the long term. This section explores the literature relating to active investing flowed by literature on passive investing.

2.2.1. Active investing

The active investing strategy was introduced by developing the first mutual fund (an actively managed unit trust) in 1924 (Rathbones, 2022). The strategy aimed to identify mispriced assets through continuously monitoring financial markets that it exploited, leading to gains (Han, Hirshleifer, Eisfeldt & Levin, 2012). Aiken et al. (2022) defined active management as investment managers identifying and selecting stocks that will outperform the market over a period. These stocks will be underValued by the investor on their acquisition, leading to substantial investment gains if the stock rises to its initial Value. These funds aimed to generate superior returns compared to the traditional index funds at the time (Van Loo, Molander & Olsson, 2020). Over the years, through the increase in computing power and information availability, it has become easier for fund managers to identify mispriced assets with the potential to generate greater returns. As time has progressed, the market has become more efficient in asset pricing, making it harder for investors to identify mispriced assets that negatively impacted returns on their investments (Van Loo, Molander & Olsson, 2020).

Cremers, Fulkerson and Riley (2019) examined the effect on fees of actively managed mutual funds due to the introduction of low-cost mutual fund indices. In markets with more competitive index funds, active managers' investment strategies changed to promote lower costs with consistent alpha generation. In markets with less competition, actively managed funds were found to have high management fees while delivering a portfolio that underperformed on an alpha generation basis. It was concluded that the growth of explicitly indexed funds increased competition within the asset management industry, resulting in actively managed funds having lower fees. This situation, in turn, allows investors to access cheaper investing alternatives. Active funds were found to underperform passive investment tools (related indexes) by around 75 basis points (Elton, Gruber & de Souza, 2019).

Van Loo et al. (2020) sought to determine the level of influence by active investors and whether it correlates to better fund performance, resulting in offsetting the funds-related fees. This practice, in turn, would argue for the use of actively managed funds. The study used a comparative analysis of actively and passively managed funds (market-related and industry-specific indices). The results indicated that over the testing period, the returns were found to be almost indistinguishable. However, active funds produced better returns during bearish market periods, whereas passive funds would excel during bullish periods. The study results argued favouring a passive investment strategy over an active one. It was concluded that there was insufficient evidence in favour of active investors positively impacting returns.

Rickens (2020) investigated the performance of property unit trusts in South Africa from 2005 to 2018. This study aimed to determine whether active investors can generate a greater return than passive investment tools. Rickens (2020) found that in all periods tested, the active funds did not generate significantly positive return, with only a limited number of funds were generate significantly positive returns. Significant outperformance was uncommon and inconsistent over the period. It was found that the returns' volatility by actively managed funds was less than that of the average volatility of passively managed funds. Rickens (2020) concluded that a passive index would provide better exposure to South African property investment industry investors.

2.2.2. Passive investing

Passive investing strategies were initially introduced in 1976 through the formation of the index fund by the Vanguard Group (Van Loo et al., 2020). A passive investment strategy involves purchasing an investment product (usually an index fund) that consists of a basket of stocks with similar characteristics (Easley, Michayluk, O'Hara & Putniņš, 2021). Investors who primarily use a passive investing strategy tend to hold onto the investment product for an extended period, because this practice is considered the best way to maximize investor returns. These passive investment products are refreshed at a set frequency to allow companies new to the market to still be included in the index (Van Loo et al., 2020).

A major issue with indices in the market is their low refresh rate. With a low refresh rate indices cannot use major short-term information to improve the index return (Carosa, 2005). Over the years additional investment strategies have been formed that focus primarily on further diversification to lower risk exposure because of extreme market conditions (Van Loo et al., 2020).

Benefits of passive investing, include risk diversification and removing cognitive biases surrounding investing such as overconfidence and stock-pick bias (Rompotis, 2018). Indexing allows for the replication of market risk, based on the specific market being replicated. More recently passive investing indices can capture an entire industry or market (Fayad, 2018). An example of this type of index is the Johannesburg Stock Exchange (JSE) top 40, which is an index that replicates the returns of the 40 largest (by market capitalization) South African companies listed on the JSE.

Studies on measuring cost adjusted returns between actively and passively managed funds are numerous (Turunen, 2021; D'Hondt, De Winne, Ghysels & Raymond, 2020). Turunen (2021) concluded that the cheapest passively managed index funds were more likely to succeed when compared to pricier actively managed funds. The main reason for this outcome is that index funds require very little to no need to perform extensive fundamental research when developing their index and, thus, a lower fee can be charged (Adams, 2022).

2.2.2.1.1 Exchange Traded Fund (ETF)

Lettau and Madhavan (2018) define an ETF as an investment tool used by investors that tracks the performance of a specific index. An ETF combines characteristics of both a unit trust (a diversified investment portfolio), with features of ordinary stock (tradability) (Trainor, Chhachhi & Brown, 2018). Investor funds are pooled together and divided into portions that are then traded on a secondary market (Jacobson, 2019). Unlike mutual funds, which only allow for redemption and acquisition of shares at a predetermined point (usually the end of the trading day), ETFs allow for continued trading throughout the day (Ben-David, Franzoni & Moussawi, 2018). ETFs have recently increased in popularity amongst investors given the low cost of investment and ease of tradability. ETFs have been found to track the specific benchmark better than unit trusts while providing investors lower return volatility (Mohamad Abdullah, Rahman & Rahim, 2018).

Subramanian (2014) compared the performance of both ETFs and their related index funds to determine whether fund managers could generate excess. The empirical results found that ETFs outperformed their underlying index, while index funds showed mixed results. A reason for the superior performance of the ETFs was the lower expense ratio. As index funds have higher management fees, in addition to being subject to higher capital gains tax when compared to ETFs.

The success of ETFs can be attributed to the increased benefit of diversification and its low cost of investment (Ben-David et al., 2018). As a result of the lower investment costs, these investment tools attract a new type of investor. This new class of investor is a high frequency investor whose demand shocks may create arbitrage gains amongst other investors. This result would increase the volatility of the returns generated by the ETF. Ben-David et al. (2018), found that stocks mainly owned by ETFs show a higher volatility than similar securities. They argued that because of the increased volatility risk present in the ETF, a risk premium should be included in determination of the Value of the ETF for short term investors.

Elton et al. (2019) looked to identify which factors affect the performance between ETFs and mutual funds. Regarding ETFs, a differentiating factor affecting the performance was the number of passive funds within the same family. Another key factor when analyzing the performance of an ETF is the expense ratio of the ETF. In addition, Elton, et al. (2019) found that choosing a low-cost ETF over a low-cost mutual fund offered a better return over the period tested. Elton et al. (2019) found that index mutual funds were better at tracking the performance of their underlying index. In addition, this study discovered that a substantial factor that attracts fund managers is the fund's expense ratio, which is consistent with findings by Elton et al. (2019).

In conclusion ETFs are a relatively new form of investment vehicle and is found to be more passive since it is used to track a specific market. These funds promote market efficiency in the EMH because all the information surrounding the fund is publicly available. These ETF funds provide investors with less risk and have lower investment costs while delivering higher returns than other passive investment tools. These funds are an effective type of investment for investors who like to diversify their investment risk and enjoy a cheaper investment.

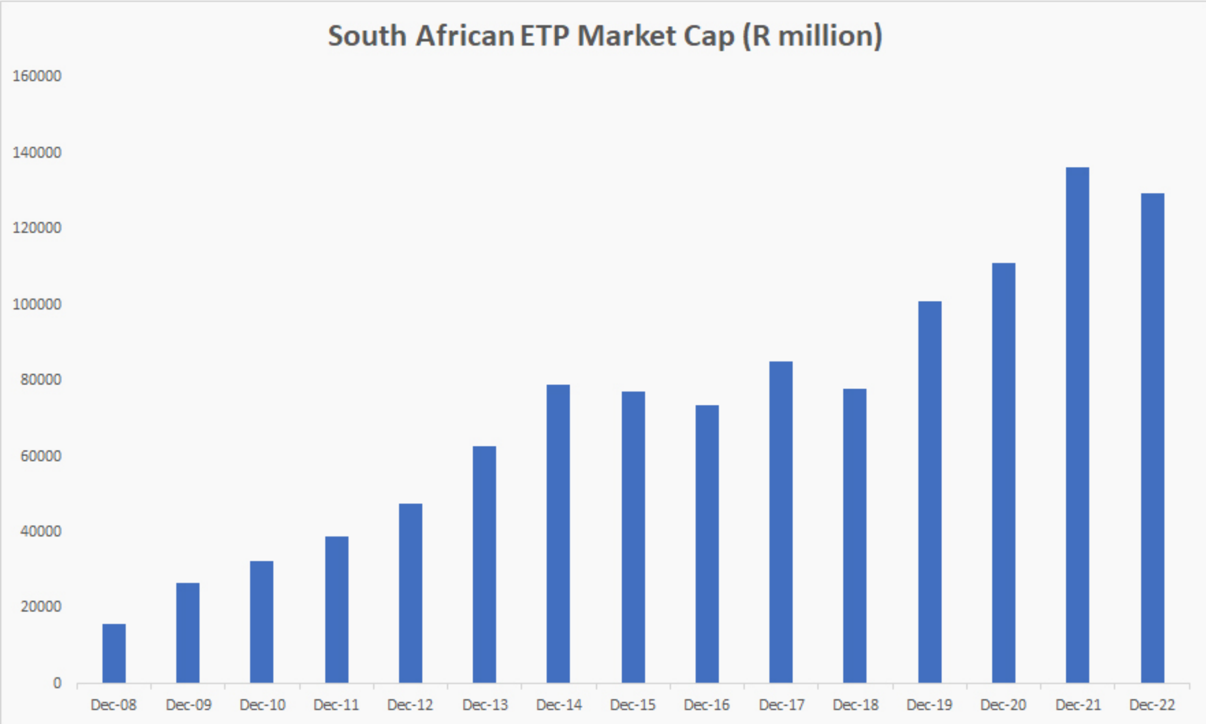
2.2.2.1.2 Developed markets

Since the global financial crisis of 2008 there has been a large shift by investors to move from actively managed funds to passively managed funds. In 2022 it was found by the Investment Company Institute that passively managed funds assets exceeded actively managed funds assets in the United States of America (USA) (Malik, 2022). It is shown that in America more than $2 billion has been moved from actively managed funds to passively managed funds (Cairns, 2022). The move from active funds to passive funds is mainly due to consumer preferences as passively held funds have much lower costs associated with investing and more transparency with investments.

2.2.2.1.3. Developing markets

The amount of assets in passive investments, in South Africa, is not as substantial as other markets such as the USA and Europe. However, passive investing strategies have seen tremendous growth over recent times within South Africa (Lambridis, 2017). In America ETFs provide owners with much larger tax advantages when compared to other passive investment vehicles. This tax advantage is not available in South Africa and both ETFs as well as unit trusts are taxed in the same manner.

Graph 1: South African exchange-traded product (ETP) market capitalization from December 2008- December 2022



Source: Daily Investor (15 January 2023). Note – South African ETP industry market cap at year-end (R million) from December 2008 to December 2022.

The graph above shows the growth of South African ETFs from December 2008 until December 2022. It shows a significant increase in investment into the ETF market with consistent growth over the 12 years. In 2008 the total market capitalization of these ETFs was approximately R16 442.7 million, growing to R109 806,3 million in June 2021 (Brown, 2021). During 2022 markets, both globally and in South Africa, saw a massive decline in their returns due to major socio-economic factors (Brown, 2022). As a result of these difficulties, it is not surprising to see the decrease in the market capitalisation of the ETP range. The ETF market has grown despite the large losses other local and global equity markets faced over this period. During the first six months of 2022, the USA S&P 500 index saw losses of 20% up to September 2022 (Brown, 2022).

2.3. Value and non-Value investing

Value investing strategies are defined as an investment approach that centres on allocating capital into securities of companies exhibiting a substantial book-to-market equity ratio alongside lower earnings, amongst other key metrics. Empirical research by

Fama and French (1996) underscores the higher inherent risk associated with Value stocks. After considering this elevated risk, it becomes clear that Value stocks offer a greater average return to investors.

Fama and French (1998) conducted a study to investigate the existence of a Value premium in emerging markets. They examined portfolios in 16 countries, including Value-weighted market portfolios, Value portfolios and growth portfolios of different sizes. Their research revealed that, on average, returns from these portfolios, in emerging markets, surpassed those of developed markets These findings indicated the presence of a Value premium in emerging markets. Fama and French (1998) through this study demonstrated that Value portfolios consistently outperformed growth portfolios in emerging markets.

Building on Fama and French's (1998) work, Gonenc and Karan (2003) sought to explore the existence of a Value premium in the Istanbul Stock Exchange, a market known for its rapid growth and volatility at the time. The increased volatility was attributed to high inflation rates and an unstable economic and political climate, consistent with findings by Ahmed et al. (2022). Gonenc and Karan’s (2003) study found no evidence of a Value premium within the Istanbul Stock Exchange during the testing period, and neither growth stocks nor Value stocks outperformed one another.

Yen, Sun, and Yan (2004) analysed the Singapore market to investigate the presence of a Value premium. Their study spanned five years and sought to determine whether the Value premium was persistent or transitory. The results revealed that a Value premium was present, but it was concentrated primarily in the initial two years following the creation of the portfolio. Additionally, the study found that earnings’ growth for growth stocks tended to be overestimated, while the prediction for Value stocks was not.

Du Toit (2012) Looked to determine the comparative difference between Value investing versus growth investing within South Africa. To decide which investing strategy outperformed during the period, attention was drawn to the valuation disparity and later performance of the selected stocks. All stocks that formed part of the FTSE/JSE all share index was used in the analysis. Du Toit noted that Value stocks determined a statistically significant relationship between Value stocks performance and its valuation differential. It was found that on a five-year annualised return analysis, Value stocks outperformed their growth counterparts in all periods tested except for the March 2002- October 2006 period. It is important to note that this study found relationships between Value and growth investing strategies in line with findings from literature developed markets. Du Toit (2012) attributed this finding to the development in technology as well as advances in communication internationally.

Hammar (2014) focusing on the JSE using 14 years, found that Value stocks outperformed growth stocks when evaluated using the price-to-earnings metric. In contrast, when employing the price-to-book metric, growth stocks outperformed Value stocks. These findings were in line with results from other emerging markets, such as Yen et al. (2004), Gonenc and Karan (2003), and Fama and French (1998), which collectively suggested the presence of a Value premium.

Langa (2016) looked to determine the effectiveness of a Value investing strategy within a South African context by evaluating the performance of various portfolios over the period 2000 - 2015. The study looked to determine the level of risk associated with the two investing strategies over a period of slow economic growth as well as during a financial crisis. It was found that there was limited evidence of the existence of a Value premium context over the period tested. This finding contradicts the findings of Du Toit (2012) that previously found that a Value investing strategy outperformed a growth strategy.

Fama and French (2021) provided a contemporary examination of the Value premium, defining it as the excess return of a Value portfolio relative to the market return. Their study covered the period from July 1963 to July 2019. Their findings indicated that the first half of the period tested exhibited a higher return than the second. This study confirmed the earlier findings of Fama and French (1993) solidifying the notion that the Value premium is not a constant but subject to variations over time.

2.4. Bull and bear market

Capocci, Corhay, and Hübner (2005) conducted a study that compared the returns of 2 894 hedge funds for 108 months spanning from 1994 to 2002, including both bull and bear market phases. The research identified two sub-periods within this timeframe, corresponding to the bull and bear market conditions. During the overall test period, hedge funds displayed notable outperformance relative to the market return, with the primary driver of this outperformance attributed to the substantially higher returns generated during the bullish sub-period. However, it is worth noting that the outperformance of hedge funds during the bearish sub-period was less pronounced than during the bullish phase.

Kim and Nofsinger (2007) focused their research on understanding the behaviour of individual investors in Japan during extended bull and bear market periods spanning from 1984 - 1989. Their findings indicated that, during bull markets, individual investors preferred higher book-to-market stocks, reflecting a preference for Value stocks. This stock selection preference aligns with the idea that investors favour less risky, Value-oriented investments during bullish market conditions. During bear markets, a notable shift in behaviour was observed rather than adopting a risk-averse stance as might be expected, investors tended to choose riskier stocks (Kim & Nofsinger, 2007). Additionally, investors held onto underperforming stocks. This finding challenges the overconfidence theories that investors become more risk-averse during bearish market phases, highlighting the complexity of individual investor behaviour during economic downturns.

Maroof, Javid, and Mian (2019) conducted a study that focused on the performance of mutual funds in Pakistan during bull and bear market phases spanning from 2007 - 2014. During bear markets, mutual funds performed slightly better than the market, suggesting an ability to weather market downturns effectively. During bull markets, mutual funds could not outperform the market. This outperformance during bear markets is attributed to the ability of fund managers to restructure and rebalance their portfolios, minimizing exposure to losses. The findings emphasize the significance of proactive portfolio management in navigating challenging market conditions, particularly during bear markets.

Arora and Mishra (2023) investigated the risk tolerance of fund managers in India during bull and bear market phases. Their research indicated a lower level of risk tolerance among fund managers during bullish subperiods. This observation aligns with the concept that financial managers are more risk-averse during bullish market conditions.

An interesting side of the findings of the reviewed literature was the age-related variation in risk tolerance among fund managers. It was observed that younger fund managers displayed a lower level of risk aversion during bear market phases compared to their older counterparts. This discrepancy can be attributed to the managers' experience and time in the field, which influence fund managers' risk-taking behaviour.

2.5 Relevance of this study

As noted above in literature whether markets are efficient or not is debatable, and more so in South Africa. There is also a debate as to whether active management can indeed outperformance passive investments on a long-term basis. This study aims to contribute to the literature by firstly updating the time period. Secondly by assessing by classifying active managers into different management styles, as well as assessing performance across different market conditions. By doing so, this study seeks to determine whether an actively managed portfolio offers Value to investors during varying market conditions?

Table 1: Summary of research findings related to the active versus passive debate

Name of Author/Title of Paper	Year of Publication	Time Period Used in Testing	Outcome of the Study	Preferred Investing Strategy
Cremers et al. (2019)	2019	N/A – Literature review	Growth of explicitly indexed funds increases competition, leading to lower fees for active funds. Actively managed funds underperform passive investment tools.	Active Investing Strategy
Han et al. (2012)	2012	N/A	Active investing strategy exploits mispriced assets to achieve gains.	Active Investing Strategy
Aiken et al. (2022)	2022	2008-2019	Active management involves selecting underValued stocks to outperform the market.	Active Investing Strategy
Van Loo et al. (2020)	2020	2005-2020	Returns of actively managed funds and passively managed funds are almost indistinguishable. Active funds perform better in bearish markets, passive funds excel in bullish markets.	Passive Investing Strategy

Rickens (2020)	2020	2005-2018	Active funds in the South African property industry show inconclusive outperformance. Passive index provides better exposure for investors.	Passive Investing Strategy
Easley et al. (2021)	2021	2000-2017	Passive investing strategy involves purchasing index funds with similar characteristics.	Passive Investing Strategy
Carosa (2005)	2005	1975-2004	Passive indices are criticized for being "too passive" and unable to take advantage of short-term information.	Passive Investing Strategy
Narend et al. (2016)	2016	2006-2014	Passive investing is favoured over actively managed funds due to lower costs and better returns.	Passive Investing Strategy
Ellis (2018)	2018	1984-2002	Investment into passive vehicles increased by 11.4% during the specified period.	Passive Investing Strategy
Turunen (2021)	2021	2004-2018	Cheaper index funds (passively managed) more likely to succeed compared to pricier actively managed funds.	Passive Investing Strategy
D'Hondt et al. (2020)	2020	2003-2012	Technological developments in AI and automation allow index funds to charge lower costs.	Passive Investing Strategy

Adams (2022)	2022	2010-2019	Passive investment funds provide lower costs of investing.	Passive Investing Strategy

Note: The following table highlights the finding of the prior researched conducted in the active versus passive debate and highlights a shortcoming being the length of time being tested in these studies.

3. Method.

3.1. Hypothesis

The following hypotheses are classified as follows: Tests 1 – 4 are performed specifically during market upturns referred to as bull markets. Tests 5 – 8 are performed during market downturns referred to as bear markets.

Test 1

H0 - The returns generated from the unit trust portfolio is the same as the returns of the ETF portfolio during a market upturn

H1 – The returns generated from the unit trust portfolio differs from the returns of the ETF portfolio during a market upturn

Test 2

H0 - The returns from the unit trust portfolio is the same when compared to the returns of the ETF portfolio during a market upturn on a risk adjusted basis.

H1 – The returns from the unit trust portfolio differs from the returns of the ETF portfolio during a market upturn on a risk adjusted basis.

Test 3

H0 – The returns of the unit trust portfolio that has a non-Value-based investing strategy is the same when compared to the returns of the ETF portfolio during a market upturn.

H1 – The returns of the unit trust portfolio that has a non-Value-based investing strategy differs from the returns of the ETF portfolio during a market upturn.

Test 4

H0 – The returns of the unit trust portfolio with as Value-based investing strategy is the same as the returns of the ETF portfolio during a market upturn.

H1 – The returns of the unit trust portfolio with as Value-based investing strategy differs from the returns of the ETFs during a market upturn.

Test 5

H0- The returns generated from the unit trust portfolio is the same as the returns of the ETF portfolio during a market downturn.

H1 – The returns generated from the unit trust portfolio differs from the returns of the ETF portfolio during a market downturn.

Test 6

H0 - The returns from the unit trust portfolio is the same when compared to the returns of the ETF portfolio during a market downturn on a risk adjusted basis.

H1 – The returns from the unit trust portfolio differs from the returns of the ETF portfolio during a market downturn on a risk adjusted basis.

Test 7

H0 – The returns of the unit trust portfolio that has a Value-based investing strategy is the same when compared to the returns of the ETF portfolio during a market downturn.

H1 – The returns of the unit trust portfolio that has a Value-based investing strategy differs from the returns of the ETF portfolio during a market downturn.

Test 8

H0 – The returns of the unit trust portfolio with as non-Value based investing strategy is the same as the returns of the ETF portfolio during a market downturn.

H1 – The returns of the unit trust portfolio with a non-Value-based investing strategy differs from the returns of the ETFs during a market downturn.

3.2. Research design

The returns from this ETF portfolio will then be analysed and tested against the returns from a target portfolio identified using a t-test. This study will use data sourced from Refinitiv Eikon terminal for information relating to unit trusts. Data relating to the chosen ETFs has been sourced from ETFSA. The data obtained consists of monthly net asset Value 'NAV' data, used to calculate the funds' monthly returns, for 21 years from May 2002 to December 2022. Unit trusts will be chosen based on the type of fund. This study will focus on general equity unit trusts in South Africa. A portfolio is created using ETFs chosen over the period, rebalanced to account for new listing and delisting ETFs and unit trusts, this is done to eliminate the impact of any survivorship bias within the study. The study period was chosen because of the first ETF within our general equity classification was launched in South Africa during May 2002, as such this period relates to full years because the market periods identified apply to average monthly returns relating to that specific year.

3.3. Data collection

3.3.1. Unit Trust

The study obtained a comprehensive dataset from the Refinitiv Eikon database terminal, specifically from the Association of South Africa (ASISA) category "South Africa – General – Equity". This database encompasses the total monthly returns of each unit trust in South Africa over a 21-year period, from May 2002 to December 2022. The method used to filter the population of unit trusts into the sample used to perform the analysis is found in the data sampling design sub section below.

The acquired dataset provides returns gross of fees for each calendar month, reflecting the performance of individual unit trusts. To determine the net of fee, return of the portfolio, the average monthly fee percentage is deducted from the gross of fee return. Notably, all returns are calculated based on the reinvestment of distributions declared by the unit trusts.

3.3.2. Data Sampling Design

The database of unit trusts has been adjusted for the following factor: the fund's risk level, which will be discussed below.

Unit trusts are classified according to their risk level. This study will comprise the following fund classification, forming part of the available product range for investors. The initial data set from the ASISA database consisted of 1 513 South African unit trusts. This study focuses on general equity unit trusts; therefore, the dataset was initially filtered to only contain general equity funds. The dataset was further filtered to only include funds as at 31 May 2002. This process resulted in a final sample of target portfolios comprising 22-unit trust funds. The summary of unit trusts used in the study can be found in Appendix B.

General equity unit trusts must have an investment of 80% of the total fund Value to be invested within equity securities (Asisa, 2022). The mandate of these funds is to achieve maximum capital appreciation. This type of fund aims to achieve capital growth over the medium and long term (Asisa, 2022).

Identifying a sample of unit trust for testing purposes involves a filtering process that excludes specific fund categories. Specifically, all fund-of-funds, multi-managed funds and index-tracking funds are removed from consideration. The exclusion of index-tracking funds from the sample is justified because the ETF portfolios to be analysed are primarily based on various index-tracking funds (Smith, 2020). This deliberate distinction enables a meaningful comparison between actively managed unit trusts and passively managed ETF portfolios, shedding light on the Value added by active management during different economic conditions.

As a result of this refined selection approach, the resultant sample comprises a subset of portfolios that meet the specified criteria and will be subjected to further analysis and evaluation.

3.3.3. Value and non-Value determination

The sample of unit trusts were further classified as either Value funds or non-Value funds. Value funds were determined through an analysis of the unit trusts fund factsheets. The fund factsheets were analysed for the unit trusts investing strategy. If the investing strategy was not stated an analysis of the funds' asset allocation was used to determine the firms in which the fund invested to establish whether it follows a Value strategy. If the fund did not meet the Value category it was determined to be a non-Value fund for testing purposes. The subjectivity applied to the classification is a limitation of the study.

3.3.4. Exchange traded funds (ETFs)

All relevant data pertaining to the selected ETFs, including information on their returns, has been obtained from ETFSA. The dataset used for this study encompasses 21 years, specifically from January 2001 to December 2022.

The dataset retrieved from the ETFSA database specifically focuses on ETFs within the South Africa general equity category. It comprises a comprehensive collection of monthly ETF returns totalling 132 ETFs. The returns in the dataset are presented in a net of fees format and represent discrete returns for each calendar month of the specified period.

3.3.5. Data Sampling design

The database of ETFs has been subjected to filtering to obtain a sample required for testing.

1) **Data filtering:**

The initial ETFSA database encompasses a total of 125 ETFs. However, the ETF data has been filtered based on geographical location and asset class. Only domestic funds will be included, along with equity related ETFs. 71 ETFs categorized as foreign region funds have been excluded from the sample. 13 funds that are commodity linked, together with eight funds that are bond linked, were also removed from the sample. As a result of these filtering procedures, a sample of 28 ETFs remained for further analysis.

2) **Consideration of listing duration:**

To ensure a precise comparison of returns between the target and replica portfolios, only ETFs listed from May 2002 to December 2022, including those that have been delisted will be utilized. This refined criterion has led to a reduced sample size, comprising 28 ETF funds that satisfy the specified listing duration requirement.

3) **Addressing survivorship bias:**

Among the ETFs included in the data sample, 11 funds have subsequently been delisted. As these are included during their period of existence, survivorship bias is mitigate. The replica portfolio will undergo periodic rebalancing, accounting for each newly listed fund.

Considering the limitations and adjustments applied to the sample, the resulting reduced sample of ETFs for testing purposes consists of 28 carefully selected ETFs. A breakdown of the selected ETFs used in the study can be found in Appendix C below.

3.4. Data analysis

Once the portfolios have been built, a t-test will be conducted to compare the returns of the ETF portfolio against the returns of the unit trusts. To determine if there is a benefit to having an actively managed portfolio the returns from both the actively managed fund and the passively managed ETF portfolio will be compared to the returns from the market using the Capital Asset Pricing Model (CAPM).

3.5. Risk adjusted returns

3.5.1. Sharpe ratio

To account for risk related to both investment options the Sharpe ratio will be used to risk adjust the returns of each portfolio. The standard deviation of the portfolios is key for determining the level of risk associated with the portfolios. The initial analysis will determine the standard deviation of both portfolios for each bull and bear period. The standard deviations identified will be analysed to determine the risk associated with the investment, the greater the standard deviation the riskier the investment. The Sharpe ratio is the most-widely known measure to adjust returns of an investment for risk (Choudhary & Chawla, 2014; Sathish & Srinivasan, 2016; Panigrahi, Mistry, Shukla, & Gupta, 2020; Pant & Dahal, 2022). Other risk adjustment measures such as the Treynor ratio can be used, however, the Sharpe ratio is the most used method because it allows the investment option to be adjusted for total risk rather than general systematic risks (Panigrahi et al., 2020; Pant & Dahal, 2022; Sathish & Srinivasan, 2016). The Sharpe ratio, therefore, allows for a more comprehensive assessment of risk adjusted returns because it represents the extra return that can be generated as compensation for taking additional risk.

Sharpe ratio formula (Elbannan, 2015):

$$Sharpe\ Ratio = \frac{Rp - rF}{\sigma} \quad \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots (1)$$

Where:

- Rp: Average return of the investment
- rF: Risk free rate
- σ: Standard deviation of the investment

The Sharpe ratio of the unit trust portfolio was determined and compared to the ETF portfolio's Sharpe ratio to evaluate which investment performed better during the bull and bear periods.

The risk-adjusted returns of the ETF and the unit trust portfolios were computed for both the bull and bear market periods, utilizing the Sharpe ratio. To ensure consistency in aligning the monthly returns with the annual risk-free rates, the annual risk-free rates were initially converted to a monthly rate for incorporation into the Sharpe ratio determination. The analytical process involved a sequential assessment of the returns, following this order:

1. A comparison of the standard deviations of both portfolios during the bull periods was performed to identify the portfolio exhibiting a higher standard deviation and, thus, greater risk.
2. The Sharpe ratio for each portfolio was calculated and evaluated to discern which portfolio presented a superior risk adjusted return.
3. The risk adjusted returns were subjected to a t-test to ascertain whether the unit trust portfolio demonstrated statistically substantial outperformance compared to the ETF portfolio throughout the bull period.

Risk free rate

The Sharpe ratio was employed to assess the returns of both portfolios at a risk adjusted level. To maintain consistency between the returns, derived monthly and the annual risk-free rate obtained, the risk-free rate was meticulously converted into a monthly rate using the effective interest rate formula.

Table 2: Annual average risk-free rate converted to monthly risk-free rate

Period	Annual Rate
Risk Free Rate (R186 Bond)	8.70%

Note: Table 2 presents the annual risk-free rate used in this study (R186 bond). Obtained from Bloomberg terminal.

3.6. Market return using CAPM.

CAPM formula (Elbannan, 2015)

$$E(Ri) = Rf + \beta[E(Rm) - Rf] \quad (2)$$

Where:

- R_f = risk free rate
- βm = Beta of the security
- E(RM) = expected market return

The R186 South African government bond will be used as a proxy for the risk-free rate 'R_f' because it is the most used benchmark in the industry (Vipond, 2023). The Beta of the market is assumed to be 1 as the market is being assessed.

To ensure consistency with the average monthly data, the annualised risk-free rates were converted to monthly risk-free rates using the effective interest rate formula (Correia, 2019).

$$r(eff) = (1 + \frac{i}{n})^m - 1 \quad (3)$$

3.7. Bull and bear market determination.

Bhaduri, Raja, and Durai (2006) presented four definitions that can be utilized to identify bull and bear markets. This study will use the following definition: a bull market is characterized by a period during which the market return surpasses one standard deviation of the expected market return. Conversely, a bear market is when the market return falls below one standard deviation of the expected market return. This definition is employed because a one-standard-deviation range covers a 33% deviation from the mean return. This range is of a substantial departure, aimed at eliminating any abnormal returns within a given timeframe. Furthermore, the study focuses on persistent bull and bear markets, delineated as periods in which a bull or bear market prevails for two or more consecutive years.

Specifically, market upswings and downturns will be determined by utilizing one standard deviation above and below the mean.

3.8. Significance testing (Normality testing)

A starting point in the testing phase will be determining whether the results are normally distributed. The Shapiro-Wilk test is applied to a sample of data with the following:

H0: The returns from the portfolio of unit trust and the ETF portfolio are normally distributed H1: The returns from the portfolio of unit trust and the ETF portfolio are not normally distributed.

To perform the Shapiro-Wilk and Kolmogorov Smirnov test a confidence interval of 95% is used to determine significance. The test is conducted using SPSS statistical software.

It is argued that the Shapiro-Wilk test is more appropriate for sample sizes smaller than 50 points. In contrast, the Kolmogorov-Smirnov test is favoured for larger data sets (greater than 50 data points). The tests will be performed to ensure that the data meets both tests.

A 5% and 10% significance level will determine whether the data is normally distributed. If the data is found to be normally distributed a test will be used to establish the significance of the outperformance of the investment strategy. A t-test is more appropriate due to the standard deviation of both the ETFs and unit trusts being unknown, in addition the t-test focuses on the difference of the means between the ETFs and unit trusts.The t-test type depends on whether the ETFs and unit trusts have equal or unequal variance. An F-test will be used to determine if the dataset has equal variances. If equal variances are found, a two-sample t-test assuming equal variances will be used.

If unequal variances are found, a two-sample t-test assuming unequal variances will be used.

3.9. Returns data unit trusts.

The total monthly returns for collective investment schemes for each risk mentioned above will be gathered from May 2002 to December 2022. This process will provide returns data for 245 months. All the funds used in the analysis are South African portfolios. This indicates that the funds must invest at least 60% of their total assets within South Africa (ASISA, 2022). In addition, the funds may invest 30% of their assets outside of South Africa. The final 10% of funds may be invested within Africa, excluding South Africa (ASISA, 2022).

3.10. Returns data exchange traded funds' portfolios

The total monthly returns for the identified ETFs will be gathered from May 2002 to December 2022. This process will provide returns data for 245 months. All funds that are used in the analysis are South African listed ETFs. The returns are then aggregated according to the weighting of the ETF within the ETF portfolio to determine the portfolio's return within the year.

4. Results

This section commences by determining the bull and bear years used in the results analysis. Followed by an analysis of the descriptive statistics and F-test to determine the appropriate t-tests to use in testing. Following which as analyse of the results from each hypothesis tested is presented. A summary of the results of each test performed can be found at the end of this section (Table 6 below). In concluding this chapter will compare the results from the observed tests and link these to the findings from prior literature.

4.1. Bull and bear market determination

To determine the bull and bear market periods CAPM was used as a benchmark for market performance. The benchmark return was subsequently compared against the All-

Share Index (ALSI) returns for the time frame spanning May 2002 to December 2022, the classify the periods into bull and bear periods.

The anticipated equity premium of 6.20% was used in this study. 6.2% is the geometric average return prevalent in South Africa from 1910 - 2010 (Anayochukwu, 2012). The average and standard deviation of the ALSI has been gathered from the Refinitiv Eikon database.

4.2. Determination of bull and bear years

The benchmark return was then compared to the ALSI annual returns from 2002 to 2022. From the cycles annual returns will be used in testing to discover if the returns from the portfolio are significantly different to the market.

$$Lower\ Limit = 8.70\% + 1 * (6.20\% - 6.20\% * 14\%) = 13.54\%$$

$$Upper\ Limit = 8.70\% + 1 * (6.20\% + 6.20\% * 14\%) = 16.26\%$$

Any intervals characterized by returns falling within the specified lower and upper thresholds constitute neither a bull nor a bear market. A bear market is ascertained when the ALSI's return falls below 13.54% for the year, while a bull market is identified when the ALSI's returns exceed 16.26% for the year tested.

Table 3: JSE all share index annual returns for 2002 – 2022

All Share index returns (Bloomberg terminal)				
Year	ALSI Return	Bull or bear	Upper Limit	Lower Limit
2002	-8.3701%	Bear	16.264	13.536
2003	16.2190%		16.264	13.536
2004	25.6607%		16.264	13.536
2005	47.5582%		16.264	13.536
2006	41.3430%		16.264	13.536
2007	19.3695%	Bull	16.264	13.536
2008	-23.1347%	Bear	16.264	13.536
2009	32.2428%		16.264	13.536
2010	19.0567%	Bull	16.264	13.536
2011	2.6085%	Bear	16.264	13.536
2012	26.6924%		16.264	13.536
2013	21.4553%	Bull	16.264	13.536
2014	10.9336%		16.264	13.536
2015	5.2551%		16.264	13.536
2016	2.7616%	Bear	16.264	13.536
2017	21.0453%	Bull	16.264	13.536
2018	-8.4289%		16.264	13.536
2019	12.1212%		16.264	13.536
2020	7.0910%	Bear	16.264	13.536
2021	29.3103%	Bull	16.264	13.536
2022	3.9769%	Bear	16.264	13.536

Note: Table 3 presents the return of the JSE all share annually for the testing period used to determine the bull and bear years.

As indicated by Table 3 above of the 20 years identified, 19 years were classified as bull or bear years. A persistent bull or bear period occurs when there are two or more consecutive bull/bear years (Bhaduri et al., 2006). Three persistent bull periods were identified, being 2004–2007; 2009–2010 and 2012–2013, with two persistent bear periods being 2014–2016 and 2018 –2020.

4.3 Normality test results

The following subsection will make use of the Kolmogorov-Smirnov and the Shapiro-Wilk tests to determine the distribution of the returns to be tested. A normality test is needed to identify the appropriate t-test when comparing the portfolio returns.

Table 4: Normality tests conducted on the unit trust returns and ETFs portfolio.

Tests of Normality (Unit Trusts)						
	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
VAR00003	0.117	250	<0.001	0.972	265	<0.001
a. Lilliefors Significance Correction						
Tests of Normality (ETF Portfolio)						
	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
VAR00008	0.073	250	0.003	0.988	250	0.034
a. Lilliefors Significance Correction						

Note: Table 4 presents the results from both the Kolmogorov-Smirnov and Shapiro-Wilk tests conducted for both portfolios at a 5% significance level.

The Kolmogorov-Smirnov tests have a p-Value of 0.117 (for the unit trust) and 0.073 (for the portfolio of ETFs), and the Shapiro-Wilk test results have a p-Value of 0.972 (for the unit trust portfolio) and 0.988 (for the ETF portfolio). These results indicate that the data is normally distributed.

4.4. Equality of variances

The following subsection will determine the equality of the variances of both the unit trust and ETF portfolio during both bull and bear periods. Equality of variances is needed to determine the appropriate t-test when comparing the portfolio returns.

4.4.1. Determination of equal/unequal variances

The F-test was conducted with the following hypotheses during the bull run:

H0: The variances of the ETF and unit trust portfolios are equal during bull markets.

H1: The variances of the ETF and unit trust portfolios are unequal during bull markets.

The F-test was executed based on the following hypotheses during the bear run:

H0: The variances of both the ETF portfolio and the unit trust portfolio are equal during bear markets.

H1: The variances of both the ETF portfolio and the unit trust portfolio are not unequal during bear markets.

Table 5: F-Test two sample for variances during both bull and bear runs.

	Bull run	Bear run
F-Statistic	2.8712	2.4613
Critical Value	1.4512	1.2939
p-Value (one tail)	0.0000	0.0000

Note: Table 5 presents the outcomes of the F-test conducted to ascertain the equality or inequality of variances in the two portfolios during a bull market at a 5% significance level.

The results of the F-test reject the null hypothesis at a 5% significance level during both bull and bear runs, thus, indicating that the portfolios have disparate variances.

A two-sample t-test assuming unequal variances will be employed to ascertain the significance of the return differentials between the ETF and unit trust portfolios during the respective bull and bear market phases (Anayochukwu, 2022).

4.5. Results

The subsection below will present and analyse the results of the above-mentioned hypothesis for both the bull and bear periods, as well as, linking the findings from this study to the findings from prior literature. Table 6 summarising the results from all the tests conducted can be found below.

Table 6: Summary of the results from each test conducted at a 5% significance le33vel.

	Bull Runs	Bear Runs

		Mean	Variance	t Stat	P(T<=t) one-	t Critical
Test 1	Unit Trust	1,4026%	0,0010	1,4817	0,0704	1,6568
	ETF	1,2960%	0,0009			
Test 2-Adjusted returns	Unit trust	2,8084%	0,1416	2,5534	0,0484	1,6568
	ETF	1,2643%	0,0874			
Test 3 (non-Value Unit trust versus	Unit Trust	1,4170%	0,0023	-1,4242	0,0783	1,6568
	ETF	1,2960%	0,0052			
Test 4 (Value Unit trust versus ETF portfolio)	Unit Trust	1,2277%	0,0086	0,9773	0,1650	1,6568
	ETF	1,2960%	0,0047			
Test 5	Unit Trust	0,6218%	0,0002	1.8217	0.0345	1,6450
	ETF	-0,2261%	0,0072			
Test 6-Risk Adjusted returns	Unit trust	0,2310%	0,4241	0,1258	0,4501	1,6450
	ETF	0,2681%	0,0036			
Test 7 (Value Unit trust VERSUS ETF portfolio)	Unit Trust	-0,1053%	0,0026	2,8291	0,0023	1,6450
	ETF	1,3860%	0,0048			
Test 8 (Non-Value Unit trust versus ETF portfolio)	Unit Trust	0,8795%	0,0061	1,8646	0,0310	1,6450
	ETF	-0,2261%	0,0017			

Table 6 presents the results from the t-tests conducted for all eight hypotheses for both the bull and bear periods, the table included the critical Value, p-Value (one tail) and t-stat all at a 5% significance level.

4.5.1. Bull Period

The results from all the tests conducted during the bull period is presented below with an analysis of the findings.

4.5.1.1. Unadjusted returns of unit trust portfolio versus ETF portfolio

Examining the mean returns for unit trusts and ETF being 1.4026% and 1.2960%, respectively. The results of the t-test conducted per table 6 test 1, indicate the null hypothesis cannot be rejected at a 5% level of significance, as evident by the p-Value of 0.0704 meaning there is no significant difference between the returns of the two portfolios. This further highlights that there is no statistically significant additional benefit to an actively managed investing strategy during the identified bull period.

4.5.1.2. Risk Adjusted returns of unit trusts versus ETF portfolio

Below the Sharpe ratio is presented for the unit trusts and ETF portfolios.

Table 7: Sharpe ratio of each portfolio for both the bull periods

Period	Sharpe Ratio for the ETF portfolio	Sharpe ratio for the unit trust portfolio
Bull	0.3267	0.4528

Note: Table 7 presents the results of the ETF and Unit trust portfolios' Sharpe ratios during the bull period.

The Sharpe ratio for the ETF portfolio during the bull period is 0.3267 indicating that for every unit of risk the investors are exposed to, they are gaining a return of 0.3267. The Sharpe ratio for the unit trust portfolio during the bull period is notably higher at 0.4528. This finding suggests that the unit trust portfolio provides a higher risk adjusted returns than the ETF portfolio during the bull market.

The means of the risk adjusted basis for unit trusts and ETF were 2.8084% and 1.2543%, respectively. The finding per table 7 is supported when analysing the results of test 2. Results of the t-test, presented above in Table 6 test 2, had a p-Value of 0.0484. The null hypothesis for test 2 is rejected at a 5% significance level. From this it can be concluded that there is a statistically significant difference in returns generated between the actively managed portfolio and the ETF portfolio, in a positive direction. These finding support the notion that unit trusts generate a statistically significant higher return when compared to the ETF portfolio on a risk adjusted basis.

4.5.1.3. Non-Value portfolio Versus ETF Portfolio

The null hypothesis, asserting that the portfolio of unit trusts employing a non-Value-based strategy generates a return that is the same to the ETF portfolio cannot be rejected at a 5% significance level. The mean returns of the non-Value portfolio and ETF portfolio were 1.4170% and 1.2960%. The results of test 3 in Table 6 above, has a p-Value of 0.0783. The null hypothesis of test 3 is not rejected and it can be concluded that there is no statistical difference between returns of a non-Value portfolio and ETF portfolio during the identified bull periods.

4.5.1.4. Value portfolio VERSUS ETF Portfolio

The means of the Value portfolio returns and ETF returns were 1.0277% and 1.2960%, respectively. The results of test 4 in Table 6 had a p-Value of 0.1650 and the null hypothesis of test 4 cannot be rejected at a 5% significance level. These finding indicate when comparing the returns on the unadjusted returns of the unit trust portfolio, with a Value-focused strategy, to those of the ETF portfolio, during bull market periods, the returns do not significantly differ from each other. This indicates there is no statistically significant benefit to investing in a Value based unit trust portfolio during the identified bull market period, when compared to a ETF portfolio.

4.5.2. Results during Bear Periods

Discussion of the results from the tests conducted during the bear period is presented below with an analysis of the findings. This sub section will present the findings of tests 5 - 8, and a summary of with all the test results can be found in table 6 above.

4.5.2.1. Unadjusted for risk returns of units trust portfolio versus ETF portfolio

With mean returns of the unit trust portfolio and ETF portfolio were 0.6218% and -0.2261%, respectively. With the results of test 5 in Table 6 having a p-Value of 0.0345 the null hypothesis is rejected at a 5% significance level. From this it can be concluded that there is a significant difference between the returns of the unit trust portfolio and the ETF portfolio during the identified bear period. It can be concluded that there is an additional benefit associated with investing in an actively managed investing strategy during the identified bear market period.

4.5.2.2 Risk adjusted returns of unit trust portfolio versus ETF portfolio

Table 8: Sharpe ratio of each portfolio during the identified bear market periods

Period	Sharpe Ratio for the ETF portfolio	Sharpe ratio for the unit trust portfolio
Bear	0.5206	0.5948

Note: Table 8 presents the results of the Sharpe ratio of the ETF portfolio and the unit trust portfolio during the bear period.

The findings Table 8 indicate that in the bear market periods, the unit trust portfolio outperforms the ETF portfolio. The Sharpe ratio for the ETF portfolio during the bear period is 0.5206 indicating that for every unit of risk the investors are exposed to, they are gaining a return of 0.5206 whereas investors would get 0.5948 in the unit trust portfolios. This higher Sharpe ratio suggests being invested in a unit trusts during a bear market is beneficial to investors.

The means of the risk adjusted basis for unit trusts and ETF were 0.2310% and 0.2681%, respectively. The result of table 8 are however not supported by the analysis of the p-Value. Table 6 test 6 had a p-Value of 0.4501 and thus the null hypothesis of test 6 is not rejected at a 5% significance level. It can be concluded that unit trust does not offer a statistically significant higher return that ETFs during bear periods. During bear periods, while the unit trust does generate a higher return when compared to the ETF portfolio on a risk adjusted basis, the difference is not statistically significant.

4.5.2.3 Value portfolio versus ETF portfolio

The mean return of the unit trust and ETF portfolios were -0.1053% and 1.3860%, respectively. The results of test 7 had a p-Value of 0.0023. This results indicates that the test 7 null hypothesis, asserting that the returns of the portfolio of unit trusts with a Value focused investing strategy is the same as the returns of the portfolio of ETFs during the bear periods, can be rejected at a 1% significance level. It can be concluded that investing in a Value portfolio offers significantly different returns to the ETF portfolio. It can further be concluded that there is an additional benefit to investing in a unit trust portfolio with a Value focused investing strategy over the ETF portfolio during the identified bear period.

4.5.2.4. Non-Value portfolio versus ETF portfolio

The mean return of the unit trust and ETF portfolio were 0.8795% and -0.2261% respectively. The results test 8 had a p-Value of 0.0310. This result indicates that the test 8 null hypothesis, which ascertains that the returns of the of the portfolio of unit trusts with a non-Value focused investing strategy is the same as the returns of the portfolio of ETFs during the bear period, can be rejected at a 5% significance level. It can be concluded that investing in a non-Value unit trust portfolio offers returns that are significantly different to the returns of the ETF portfolio. This further indicates that there is an additional benefit to investing in a unit trust portfolio with a noon-Value focused investing strategy over the ETF portfolio during the identified bear period.

This finding resonates with a substantial body of reviewed literature concerning investment returns during bear market intervals. Individuals who manage unit trusts often reduce their investments during market downturns, effectively mitigating their exposure to potential losses.

4.6.1 Links to prior literature on Active versus passive investing

The outcomes of this study align with the research of Aiken et al. (2022), Cremers et al. (2019), and Han et al. (2012), corroborating their assertions that an active investing strategy outperforms a passive investing approach. The superior performance of the unit trust portfolio over the ETF portfolio on a risk-adjusted basis in both the bull and bear market phases further substantiates the benefit of active managers ability to add Value. This result suggests that the adeptness of unit trust managers in identifying mispriced assets align, with the assertions made by Han et al. (2012).

In contrast, this dissertation presents a divergence from the findings of Carosa (2005), Easley et al. (2021), Rickens (2020) and Van Loo and Molander (2020), which indicated that passive investing strategies tended to outperform active strategies. While this incongruity exists, it is essential to note the contextual differences in the methodology and approach. Particularly, it is worth mentioning that Easley et al. (2021) utilized an index fund to represent passive investing. In contrast, in this dissertation, ETFs were employed which are widely recognized as a common proxy for passive investing. The discrepancy in results is not grounded in the substitution of investment instruments but in the nuanced characteristics of ETFs, that embody a form of passive investing.

Considering the above comments, it is essential to recognize the complex nature of investment strategies and market dynamics. The efficacy of a particular approach, whether active or passive, is contingent upon many factors; market conditions, period studied, asset classes, management strategies and investor preferences (Hammar, 2014; Rompotis, 2018). The financial landscape is inherently intricate and various elements interplay to influence the performance of investment portfolios. The separation between active and passive strategies may not be absolute and a detailed understanding of the specific instruments is required to navigate the complexities of the market. In this study, there was a significant focus on determination of the appropriate comparatives used for active and passive.

In conclusion, while this study aligns with the findings of many researchers (Aiken et al., 2022; Cremers et al., 2019; Han & Hirshleifer, 2015) supporting active investing strategies, it also acknowledges, an that it improves the instruments selected, there are potentially market factors that have not been taken into account. Such as the specific nuances of instruments specifically ETFs used. As timing of rebalancing, and in and out flows could significant impact pricing relative to the underlying market movements. Ultimately, the appropriateness of an investment strategy hinges upon a judicious consideration of market circumstances, risk tolerance and individual investment goals.

4.6.2. Link to the efficient market hypothesis

It is evident from the results of the tests conducted that during both bull and bear periods the unit trust portfolio earned a greater return than the ETFs portfolio on a risk adjusted basis. This result can be used to evaluate the South African economy's form of market efficiency. As the unit trust portfolio outperformed the ETFs portfolio on a risk adjusted basis during both periods, the South African economy is in a weak form of market efficiency. This finding agrees with Heymans and Santana (2018) who found the JSE, South Africa's primary stock exchange, to be in a weak form of market efficiency. The above results also agree with the findings of Nazlioglu et al. (2023) who likewise tested emerging markets' efficiency and found them to be inefficient.

4.6.3. Value versus non-Value links to prior literature

The Value premium defined within this dissertation is the additional returns achieved by investing in Value unit trusts compared to the returns of the ETF portfolio. Unit trusts following a Value strategy were identified as the unit trusts growth expectations and are often associated with higher valuations (Fama and French, 1996).

The presence of a Value premium in the South African unit trust market, as evidenced by the above analysis, contrasts with the findings of Lev and Srivastava (2021). Lev's study, focusing on the U.S. market, revealed the unprofitability of Value investing over a prolonged period. However, this divergence should be viewed within distinct market conditions. It is expected that results in emerging markets may differ significantly from those in developed markets, such as the USA.

The results obtained in this analysis further support Fama and French's (1998) proposition that emerging markets exhibit a Value premium. Fama and French's research indicated that, on average, returns from Value stocks in emerging markets exceeded those in developed markets. Given the nature of the South African market as an emerging economy, it is reasonable to expect a higher Value premium than developed markets.

Moreover, the findings of this dissertation remain consistent with research undertaken by Gonenc and Karan (2003) and Yen et al. (2004). Overall, the current study's analysis contributes to the broader understanding of the Value premium in emerging markets, particularly in the South African unit trust market context.

4.6.4. Bull and bear link to prior literature

The findings of this study align with the research of Capocci et al. (2005) whose study compared the returns of hedge funds during bull and bear market phases. The current research indicated that the unit trust portfolio significantly outperformed the ETF portfolio in the bear market period, while there is outperformance on the risk adjusted basis this was not found to be statistically significant. The consistency in finding that active managers outperform in the bull period reinforces the idea that active management can add significant Value to investment strategies, contributing to higher returns.

The alignment of the observations relating to the results from the tests conducted for this study with that of Capocci et al.'s (2005) research also supports the notion of low information efficiency within the South African market. This idea is represented by the actively managed portfolio outperforming the passively managed portfolio during the bear periods. The ability of fund managers to consistently outperform market benchmarks during bull markets suggests opportunities for active stock selection, indicating a degree of inefficiency in the market. This perception is consistent with the findings of Heymans and Santana (2018) that revealed a weak form of information efficiency within the South African market. The combination of these findings underscores the potential for skilled fund managers to exploit market inefficiencies and generate superior returns during bullish market conditions.

The dissertation findings revealed that the unit trust portfolio outperformed the ETF portfolio during the bearish market phase, excluding the risk adjusted basis, indicating the ability of fund managers to limit losses effectively by restructuring the fund. This loss limitation characteristic illustrates the capacity of fund managers to protect investors' capital during market downturns.

The current results recorded in bear market conditions align with the research conducted by Maroof et al. (2019), who studied the performance of mutual funds in Pakistan during bear market periods. Maroof et al. (2019) found that mutual funds could perform slightly better than the market during bearish phases. This outperformance was attributed to the fund managers' capacity to restructure and rebalance their portfolios strategically, minimizing their exposure to losses. The findings of this current study suggest that a similar principle applies to unit trust portfolios in the South African market.

This dissertation's findings emphasize the importance of active management during bearish market conditions. The ability to restructure a portfolio and make tactical adjustments during market downturns can be a significant advantage for investors. This result suggests that active management offers additional protection during challenging market phases.

This dissertation underscores the potential benefits of active management within the South African unit trust market, particularly in challenging market conditions. Investors and fund managers should consider the trade-offs between active and passive management strategies when making investment decisions, considering their risk tolerance and investment objectives.

5. Conclusion

The aim of this dissertation was to determine whether an actively managed portfolio offers Value to investors during varying market conditions between May 2002 and December 2022.

This dissertation made use of two distinct period being a bull and bear market period to analyse the performance of these portfolios within distinct market conditions to further contrast the returns generated and allow for a more in-depth analysis of the performance of these funds. Bull and Bear periods were determined using JSE ALSI annual returns and identified when annual returns were greater than one standard deviation from the mean return.

The returns were tested for normality using a Shapiro-Wilk and Kolmogorov-Smirnov test, and found to be normally distributed. The variance of the returns was then examined using a F-test, and it was found for both Bull and Bear period the returns between the samples had disparate variances.

A comparative analysis of the returns generated from a portfolio of unit trust and a portfolio of ETF's was performed using two-sample t-tests assuming unequal variances. In addition, the portfolio of unit trust was further broken up and assessed by their nature (whether it followed a Value focused investing strategy or a non-Value-based strategy).

The finding for the two distinct periods were as follows:

Bull period

The following results were concluded based on significance assess using the p-Value from the respective t-tests performed. The returns, not adjusted for risk, between the active and ETF portfolios were not significantly different, indicating that there is no additional Value when investing in an actively managed investing strategy. It was noted that when the returns of the risk adjusted portfolios were analysed, the returns of this portfolio were significantly different from that of the ETF portfolio, this highlights an additional benefit for the actively managed strategy during the identified bull period. The significant difference was also found between the following portfolios the returns not adjusted for risk returns when actively managed portfolios were split between Value investing and non-Value investing strategies. This finding aligns with rliterature suggesting that active management during market upturns can lead to better returns (Aiken et al., 2022; Cremers et al., 2019). However, the results contradict the findings of other studies (Easley et al., 2021; Lantushenko, Schellhorn, & Zaynutdinova, 2022; Van Loo & Molander, 2020). The reason for this contradiction during both periods can be explained with reference to Heymans and Santana (2018), who found the South African market to be in a very weak form of market efficiency. This situation allows active managers to find mispriced assets leading to higher returns from these actively managed funds.

Bear period

The following conclusions were drawn post testing performed during the identified bear period. There were significant differences noted between the returns of actively managed portfolios and ETF portfolios for the unadjusted for risk returns portfolio using Value investing portfolio and non-Value investing strategy when compared to the ETF portfolio, as well as non-risk adjusted returns. This difference highlights the additional Value created from investing in an actively managed portfolio over a passively managed one. This Value has been attributed to unit trust fund managers ability to limit losses during these bear periods. It is important to note that when analysing returns of the risk adjusted actively managed portfolio and the ETF portfolio the returns did not differ significantly.

These findings align with the prevailing literature, that suggests that active management, can potentially mitigate exposure to losses during market downturns (Maroof et al., 2019).

Moreover, as the current study results show, the unit trust portfolio did substantially outperform the ETF portfolio. In addition, this result compliments the findings of Ying (2020) and Ahmed et al. (2022) because active managers succumb to behavioural biases, such as loss limitation, to the fund managers advantage during a market downturn since their objective is to beat the market through earning a lower loss than the market.

While ETFs are designed to track market indices closely and are expected to perform well during bull markets, the current findings suggest that the human element in managing unit trusts can lead to better returns for investors in most instances. However, investors should consider the possible limitations of this study and consider the market context when choosing between ETFs and unit trusts.

Furthermore, understanding the risk profiles of different investment options is crucial. Unit trusts tend to have lower standard deviations, indicating lower variability and, consequently, a lower level of risk. This finding aligns with the perception that active fund managers often work to limit losses during market upturns.

In conclusion, this study underscored the significance of active management, as observed using unit trusts as a proxy, in achieving superior returns and better risk adjusted performance during bear market periods compared to passive strategies represented by ETFs. These findings contribute to the ongoing discourse in portfolio management and investment strategies, underscoring the importance of understanding market conditions and tailoring investment approaches for optimal outcomes.

Areas for Further Research and limitations of the study

Exploring different types of unit trusts (such as growth, quality , ESG etcetera) could help identify the performance of each category in various market periods. This study examines explicitly a selected sample of unit trusts.

Conducting a comparative analysis of different types of ETFs (Passive/Active/Smart Beta) would be beneficial to discern trends and determine which type yields higher returns. It's important to note that this study exclusively focuses on passive ETFs.

An investigation into the efficiency of the South African market could provide insights into the level of efficiency with which it operates. However, it's essential to clarify that this study did not primarily concentrate on assessing market efficiency.

Limitations of the Study

A notable limitation lies in the substantial judgment employed to classify the sample of unit trusts based on their focus on Value investing. Not all funds explicitly declare their investing strategy, limiting the study's accuracy and completeness. Rebalancing differences between ETFs was not considered. This dissertation did not seek to explain how different market factors could have impacted results.

Reference List

Adams, D. (2022). *Performance evaluation of South African mutual funds: The effects of fees on performance* (master's thesis). Retrieved from: https://open.uct.ac.za/server/api/core/bitstreams/0e976f32-6a94-4304-8a2b-39f494152edf/content#:~:text=Equity%20funds%20had%20the%20highest,the%20longer%20the%20time%20horizon.

Aiken, A. L., Sherrill, D. E., & Upton, K. (2022). Side-by-side management of mutual funds and actively managed exchange traded funds. *Financial Review*, *57*(3), 533–557. https://doi.org/10.1111/FIRE.12299

Akerlof, G. A., & Shiller, R. J. (2010). *Animal spirits: How human psychology drives the economy, and why it matters for global capitalism*. Princeton University Press.

Arora, N., & Mishra, B. K. (2023). Influence of bull and bear market phase on financial risk tolerance of urban individual investors in an emerging economy. *Review of Behavioural Finance*, *15*(4), 570–591. https://doi.org/10.1108/RBF-05-2021-0087/FULL/PDF

The Association for Savings and Investment South Africa. (n.d.). Local fund statistics. Retrieved November 22, 2023, from https://www.asisa.org.za/statistics/collective-investments-schemes/local-fund-statistics/.

Ben-David, I., Franzoni, F., & Moussawi, R. (2018). Do ETFs increase volatility? *Journal of Finance*, *73*(6), 2471–2535. https://doi.org/10.1111/jofi.12727

Benedict Anayochukwu, O. (2012). The impact of stock market returns on foreign portfolio investment in Nigeria. *IOSR Journal of Business and Management (IOSRJBM)*, *2*(4), 10–19. https://www.iosrjournals.org/iosr-jbm/papers/vol2-issue4/B0241019.pdf

Bhaduri, S. N., & Durai, S. R. S. (2006). Asymmetric beta in bull and bear market conditions: Evidence from India. *Applied Financial Economics Letters*, *2*(1), 55–59. https://doi.org/10.1080/17446540500396834

Bin Tariq, Y. (2015). The efficient market hypothesis: A critical review of the literature capital budgeting view project. The IUP Journal of Financial Risk Management, *7*(4), 48–63.

Cairns, P. (2022, November 17). Is the growth of passive investing messing with the markets? Retrieved from https://www.evidenceinvestor.com/is-the-growth-of-passive-investing-messing-with-markets/

Capocci, D., Corhay, A., & Hübner, G. (2005). Hedge fund performance and persistence in bull and bear markets. *The European Journal of Finance*, *11*(5), 361–392. https://doi.org/10.1080/1351847042000286676

Choudhary, V., & Chawla, P. S. (2014). Performance evaluation of mutual funds: A study of selected diversified equity mutual funds in India. In *International Conference on Business, Law, and Corporate Social Responsibility* (Vol. 2, No. 10).

Cremers, K. M., Fulkerson, J. A., & Riley, T. B. (2019). Challenging the conventional wisdom on active management: A review of the past 20 years of academic literature on actively managed mutual funds. *Financial Analysts Journal*, *75*(4), 8–35. https://doi.org/10.1080/0015198X.2019.1628555

D'Hondt, C., De Winne, R., Ghysels, E., & Raymond, S. (2020). Artificial intelligence alter egos: Who might benefit from robo-investing? *Journal of Empirical Finance*, *59*, 278–299. https://doi.org/10.1016/J.JEMPFIN.2020.10.002

Du Toit, S. G. (2012). *Value investing versus growth investing in South Africa: valuation disparities and subsequent performance* (Doctoral dissertation, Stellenbosch: Stellenbosch University).

Easley, D., Michayluk, D., O'Hara, M., & Putniņš, T. J. (2021). The active world of passive investing. *Review of Finance*, *25*(5), 1433–1471. https://doi.org/10.1093/ROF/RFAB021

Elbannan, M. A. (2015). The capital asset pricing model: An overview of the theory. *International Journal of Economics and Finance*, *7*(1). https://doi.org/10.5539/ijef.v7n1p216

Ellis, C. D. (2015). In defense of active investing. *Financial Analysts Journal*, *71*(4), 4–7. https://doi.org/10.2469/faj.v71.n4.5

Elton, E. J., Gruber, M. J., & de Souza, A. (2019). Passive mutual funds and ETFs: Performance and comparison. *Journal of Banking & Finance*, *106*, 265–275. https://doi.org/10.1016/J.JBANKFIN.2019.07.004

Fama, E. F. (1970). Efficient capital markets: A review of theory and empirical work. *The Journal of Finance*, *25*(2), 383–417. https://doi.org/10.2307/2325486

Fama, E. F., & French, K. R. (1993). Common risk factors in the returns on stocks and bonds. *Journal of Financial Economics*, *33*(1), 3–56. https://doi.org/10.1016/0304-405X(93)90023-5

Fama, E. F., & French, K. R. (1996). Multifactor explanations of asset pricing anomalies. *The Journal of Finance*, *51* (1), 55–84. https://doi.org/10.1111/j.1540-6261.1996.tb05202.x

Fama, E. F., & French, K. R. (1998). Value versus growth: The international evidence. *The Journal of Finance*, *53*(6), 1975–1999. https://doi.org/10.1111/0022-1082.00080

Fama, E. F., & French, K. R. (2021). The Value premium. *The Review of Asset Pricing Studies*, *11*(1), 105–121. https://doi.org/10.1093/RAPSTU/RAAA021

Gonenc, H., & Karan, M. B. (2003). Do Value stocks earn higher returns than growth stocks in an emerging market? Evidence from the Istanbul Stock Exchange. *Journal of International Financial Management & Accounting*, *14*(1), 1–25. https://doi.org/10.1111/1467-646X.00088

Gupta, D., Anand, A., & Singh, R. (2008). Empirical testing of strong form of market efficiency. *Asia-Pacific Business Review*, *4*(3), 973–2470. https://doi.org/10.1177/097324700800400305

Hammar, S. (2014). Value and small firm premiums in the South African market. *South African Journal of Business Management*, *45*(4), 71–91. https://doi.org/10.4102/sajbm.v45i4.142

Han, B., & Hirshleifer, D. A. (2015). Self-enhancing transmission bias and active investing. *Social Science Research Network Electronic Journal*. https://doi.org/10.2139/SSRN.2032697

Hellström, J., Liu, Y., & Sjögren, T. (2018). Stock exchange mergers and weak-form information efficiency: Evidence from the OMX Nordic and Baltic consolidation, *The Nordic Journal of Business,* *67*(2), 114–136. Retrieved from http://urn.kb.se/resolve?urn=urn:nbn:se:umu:diva-163496.

Heymans, A., & Santana, L. (2018). How efficient is the Johannesburg Stock Exchange really? *South African Journal of Economic and Management Sciences*, *21*(1), 1–14. https://doi.org/10.4102/SAJEMS.V21I1.1968

Jandik, T., Mandelker, G., & Clarke, J. (2001). The efficient market hypothesis. *Expert Financial Planning: Advice from Industry Leaders*, *7*(3/4), 126–141.

Jacobson, R. J. (2019). *Robo-advising on South African Exchange traded funds utilizing prospect theory* (master's thesis). Retrieved from https://hdl.handle.net/11427/31844

Kaczmarski, K., Farrar, S., & Zelter, P. (2022). The rise of ETFs and its powerful impact on markets. Retrieved May 23, 2023, from https://www.oliverwyman.com/our-expertise/insights/2023/may/exchange-traded-funds-are-fueling-market-opportunities.html

Kim, K. A., & Nofsinger, J. R. (2007). The behavior of Japanese individual investors during bull and bear markets. *The Journal of Behavioral Finance*, *8*(3), 138–153. https://doi.org/10.1080/15427560701545598

Kumar, A., Soni, R., Thonse Hawaldar, I., Vyas, M., & Yadav, V. (2020). The testing of efficient market hypotheses: A study of Indian pharmaceutical industry. *International Journal of Economics and Financial Issues*, *10*(3), 208–216. https://doi.org/10.32479/ijefi.9764

Langa, S. I. (2016). *The effectiveness of Value style investing in South Africa* (Doctoral dissertation, University of the Witwatersrand, Faculty of Commerce, Law and Management, Wits Business School).

Lettau, M., & Madhavan, A. (2018). Exchange-traded funds 101 for economists. *Journal of Economic Perspectives*, *32*(1), 135–154. https://doi.org/10.1257/JEP.32.1.135

Lev, B., & Srivastava, A. (2021). *Explaining the recent failure of Value investing.* Unpublished article, NYU Stern School of Business. http://doi.org/10.2139/ssrn.3442539

Malkiel, B. G. (2003). The efficient market hypothesis and its critics. *Journal of Economic Perspectives*, *17*(1), 59–82. https://doi.org/10.1257/089533003321164958

Maroof, L., Javid, A. Y., & Mian, R. U. (2019). Performance and timing abilities of mutual funds during bull and bear market: Evidence from Pakistan. *Pakistan Business Review*, *21*(1), 196–213. Retrieved from https://pbr.iobm.edu.pk/wp-content/uploads/2019/10/16-Article.pdf

Mohamad, E., Abdullah, E., Rahman, A., & Rahim, R. A. (2018). Adoption of financial technology (Fintech) in mutual fund/unit trust investment among Malaysians: Unified theory of acceptance and use of technology (UTAUT). *International Journal of Engineering & Technology*, *7*(2), 110–118. www.sciencepubco.com/index.php/IJET

Narend, S., & Thenmozhi, M. (2016). What drives fund flows to index ETFs and mutual funds? A panel analysis of funds in India. *Decision 2016*, *43*(1), 17–30. https://doi.org/10.1007/S40622-016-0124-6

Nazlioglu, S., Pazarci, S., Kar, A., & Varol, O. (2023). Efficient market hypothesis in emerging stock markets: gradual shifts and common factors in panel data. *Applied Economics Letters*, 1–7. https://doi.org/10.1080/13504851.2023.2206613

Nguyen, J., & Parsons, R. (2021). Emerging markets using improved statistical techniques. *Emerging Markets Finance and Trade, 58*(7), 2004–2016. https://doi.org/10.1080/1540496X.2021.1949981

Panigrahi, C. M. A., Mistry, M., Shukla, R., & Gupta, A. (2020). A study on performance evaluation of equity linked saving schemes (ELSS) of mutual funds. *NMIMS Journal of Economics and Public Policy*, *5*(1).

Pant, R., & Dahal, R. K. (2022). Determinants of mutual fund performance in Nepal. (Online). *Nepal Journal of Multidisciplinary Research*, *5*(5), 2705–4691. https://doi.org/10.3126/njmr.v5i5.51798

Roddenberry, S. (2011). Insider trading and market efficiency: Do insiders buy low and sell high? *Proceedings of The American Society of Business and Behavioral Sciences*, 18.

Sathish, P., & Srinivasan, K. S. (2016). Performance evaluation of selected open ended mutual fund schemes in India: An empirical study. Sona Global Management Review, 10(3), 92–105.

Smith, J. (2020). Constructing low-cost core-satellite portfolios with multiple risk constraints: practical applications to Robo advising in South Africa using active, passive, and smart-beta strategies.

Subramanian, N. (2014). Performance of ETFs and index funds: A comparative analysis (Doctoral research project). Retrieved from https://nsearchives.nseindia.com/research/content/RP_15_Mar2014.pdf

Trainor, W., Chhachhi, I., & Brown, C. (2018). A portfolio of leveraged exchange traded funds. *Social Science Research Network Electronic Journal*. https://doi.org/10.2139/SSRN.3272486

Turunen, J. (2008). *Equity index funds and ETFs: Performance comparison between passive investing alternatives* (bachelor’s thesis). Retrieved from https://lutpub.lut.fi/bitstream/handle/10024/38849/Thesis2008.pdf

Van Loo., L. & Molander, J. (2020). *Active versus passive investing: A comparative analysis* (master's thesis). Retrieved from https://hj.diva-portal.org/smash/record.jsf?pid=diva2%3A1443282&dswid=4017

Wu, C., Xiong, X., & Gao, Y. (2021). Performance comparisons between ETFs and traditional index funds: Evidence from China. *Finance Research Letters*, *40*, 101740. https://doi.org/10.1016/j.frl.2020.101740

Yen, J. Y., Sun, Q., & Yan, Y. (2004). Value versus growth stocks in Singapore. *Journal of Multinational Financial Management*, *14*(1), 19–34. https://doi.org/10.1016/S1042-444X(03)00036-7

Ziaullah, M., & Tariq, M. (2023). The performance of Pakistani equity mutual funds during bull and bear market. *Global Social Sciences Review*, *8*(2), 592–615. https://doi.org/10.31703/gssr.2023(VIII-II).53

Appendix

Appendix A: Table showing the sample of unit trust funds used within the study (split into its Value and non-Value categorisation).

List of funds categorized as non-Value funds						
OLD MUTUAL MANAGED ALPHA	ALUWANI TOP 25	CORONATION TOP 20	STANLIB EQUITY FUND	STANLIB MULTI-MANAGER	OLD MUTUAL ALABARAKA EQUITY	M& G EQUITY FUND
List of funds categorised as Value funds						
ALLAN GRAY SA EQUITY	NEDGROUP RAINMAKER	MARRIOTT DIVIDEND GROWTH	NINETY-ONE VALUE FUND	NINETY-ONE EQUITIES	OASIS CRESCENT	DENKAR
OLD MUTUAL INVESTORS EQUITY FUND	PSG EQUITY FUND					

Appendix B: Table showing the sample of ETFs used within the study.

1nvest	Absa Capital	Coreshares	FNB	Satrix	Standard Liberty	Sygnia Itrix
1nvestTop 40	NewFunds Equity Momentum	S&P SA Divividend Aristocrat (DivTrax)	Top 40 ETF	Top 40	Top 40	Top 40
	NewFunds Low Volatility	S&P SA Top 50	MidCap ETF	Capped All Share	SWIX 40	SWIX Top 40
	NewFunds MAPPS Growth			DIVI Plus		
	NewFunds MAPPS Protect			FINI 15		
	NewFunds Shari'ah Top 40			Inclusion & Diversity		
	NewFunds Value			Momentum		
	NewFunds Vol. Managed Defensive			Quality		
	NewFunds Vol. Managed High Growth			RAFI 40		
	NewFunds Vol. Managed Moderate			RESI 15		
				SWIX Top 40		