

An investigation into the strategic investment vehicles that are used to hedge against
inflation by certain Asset Management Firms.

By

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TO WHOM IT MAY CONCERN

RE: CONFIDENTIALITY CLAUSE

Due to the strategic importance of this research it would be appreciated if the contents remain confidential and not to be circulated for a period of five years.

Sincerely,

F. M'TAWARIRA

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DECLARATION

This research has not been previously accepted for any degree and is not being currently submitted in candidature for any degree.

Signed.....

Date.....

STATEMENT

No person other than Doug Engelbrecht may have access to this investigation without his prior approval.

ACKNOWLEDGEMENTS

To my daughter, Lisa and my wife Bertha.

For your love, support and encouragement; I will share my success with you.

To my Supervisor.

For your dedication and for your creative and value adding comments, I thank you earnestly.

To my two financial advisors whom I can not disclose for confidentiality

I thank you for your valued contribution to this paper.

EXECUTIVE SUMMARY

The purpose of this report is to offer an independent evaluation of strategic investment vehicles that are used to hedge against inflation by asset management companies in Zimbabwe. Zimbabwe's inflation stood at an alarming 536% at the end of December 2003, which gives the research enough motivation to establish the best inflation hedging instruments ideal in such a highly volatile and unstable environment. Since 1999 to date many companies have shut down and or scaled down their operational activities due to the adverse inflationary trading environment. This paper therefore serves to find out whether AMC's have strategic products to save corporations.

The investigation starts off by discussing the Zimbabwean inflationary situation and followed by the research's main goals, investigative questions and the reason and value for carrying out the study. The pertinent literature is then discussed and evaluated with particular emphasis on the role of asset portfolio management. The research analyses the traditional asset classes and compares their attributes to the alternative investment classes in particular with real estate investments. Previous research studies support the view that real estate retains value and that it is an instrument for the protection of asset erosion caused by the effects of inflation. The empirical findings from this study have established that real estate investments have higher returns than inflation cumulatively. As a result real estate investments offer diversification benefits within any investor's efficient portfolio.

Upon reflection of this investigation's findings some recommendations are made. Firstly the study recommends that rational investors should include real estate on their diversified portfolios in order to maximize shareholder wealth. Secondly we recommend that asset managers should push for higher holding weights when making strategic decisions on asset allocation. There is a potential for more appetizing alternative investments for the Zimbabwean investor and asset managers need a paradigm shift to include more alternative forms of investments in their portfolios.

TABLE OF CONTENTS

1	Chapter 1 – Introduction
1.1	Introduction
1.2	The Background of the Study
1.3	The Objectives of the Study
1.4	The Value of the Research
1.5	Research Hypothesis
1.6	Research Design and Methodology
1.7	Investigative Questions
2	Chapter 2 – Literature Review
2.1	Introduction
2.2	Asset Management – Theoretical Review
2.2.1	Investment Process
2.2.2	Principal/Agent Relationship in Asset Management
2.2.3	Objectives of Portfolio Management
2.2.4	Portfolio Analysis
2.2.5	Portfolio Asset Allocation
2.2.5.1	Portfolio Allocation versus Diversification
2.2.5.2	Mean Variance Rule Approach
2.3	Measuring Portfolio Risk
2.3.1	Capital Asset Pricing Model
2.3.1.1	Relevance of CAPM
2.4	Efficient Market Hypothesis
2.4.1	Implications of EMH
2.5	Macro Economic Industry Analysis
2.6	Performance Measurement
2.7	Asset Management and Inflation
2.7.1	Hedging against Inflation

2.7.2	Investment Classes and Inflation
2.7.2.1	Fixed Income Securities
2.7.2.2	Common Stock
2.7.2.3	International Stock
2.7.2.4	Property and Real Estate
2.7.2.5	Money Market based Investments
2.8	Discounted Cash Flow Technique
2.9	The Structure of the Asset Investment Industry in Zimbabwe
2.10	Conclusion
3	Chapter 3 – Research Methodology
3.1	Introduction
3.2	Research Design
3.3	Sampling Method
3.3.1	Population
3.3.2	Sample
3.3.2.1	Stratified Sampling Technique
3.4	Sources of Data Collected
3.5	Justification of Methodology
3.6	Conclusion
3.7	Ethical Considerations
4	Chapter 4 – Result Presentation and Analysis
4.1	Introduction
4.2	Findings and Analysis
4.3	Average Growth
4.4	Optimal Holdings of Real Estate in a Diversified Portfolio
4.5	Risk and Return
4.6	Conclusion

5	Chapter 5 – Conclusion
5.1	Introduction
5.2	Recommendations

PAGE

LIST OF TABLES

Table 4.1	Fund Performance – Growth For Each Year %-page 40
Table 4.2	Fund Performance – Average Growth %-page 42
Table 4.3	Cumulative Growth from year 2000-2003-page 42
Table 4.4	Optimal Holding of Real Estate in a Diversified Portfolio-page 43

PAGE

LIST OF FIGURES

Figure 1.1	Zimbabwean Inflation -page 1
Figure 2.1	The Investment Process--page 8
Figure 4.1	Annual Returns compared to inflation-page 40
Figure 4.2	Average Growth 1998-2003-page 41
Figure 4.3	Cumulative Growth from year 2000-page 42
Figure 4.4	Optimal Holding of Real Estate and other asset classes-page 44

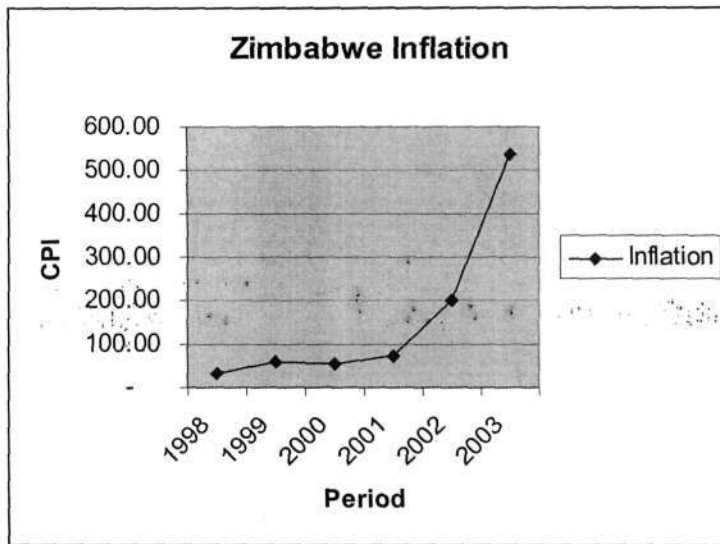
1 CHAPTER ONE INTRODUCTION

1.1 Introduction

This is the introductory chapter of the research paper which briefly describes major areas to be covered in the research process. It is important to clearly define the nature of the research problem, the problem statement, the objectives of the study, the motivation and significance of the study, the investigative questions and also the methodology to be adopted. The background section will seek to give an insight and understanding of the nature of the problem as it relates to the Zimbabwean scenario.

1.2 The Background of the Study

The sky rocketing inflation coupled with the scarcity of foreign currency and lack of direct foreign investment has combined to make Zimbabwe the fastest shrinking economy in the world. The fall of the Zimbabwe dollar, the high increases in the cost of living have had a negative impact on the returns on investments. Due to the hyperinflationary environment the value of monetary assets was severely eroded as a result of persistent price increases. Hyperinflation occurs when prices rise 100% or more in a year, causing people to lose confidence in the currency. According to the Central Statistics Office the year on year inflation rate (annual percentage change) for the month of December 2003 as measured by all items Consumer Price Index (CPI) was 536%. This means that the prices increased by an average of 536% between December 2002 and December 2003.

Figure 1.1

Source: Central Statistics Office

This period under review was also characterized by high interest rates and banks were charging an average of 900% on borrowings. There were several consumer product shortages and a thriving black market in basic commodities. Since 1999 many companies have closed down or scaled down operations due to the unstable inflationary macro-economic environment. All investors have found themselves in an economic environment where they hardly exercise control but have a duty to preserve the value of assets and also increase their value. The fast changing socio-economic landscape has prompted all investors to have a closer scrutiny of the traditional means of investments and the various returns available to them. These include among others fixed income securities, equities listed on the local bourse and bank deposit accounts.

The effect of the harsh economic business regime has had a great impact on all investors whether individuals or institutions and the question is whether our corporate investments tally up with the company corporate strategies.

Over the same period there was a sudden increase in Asset Management Companies and it will be of interest to find out how they are managing investments of corporate funds entrusted to them. There were 57 asset Management Companies that had applied to be

registered by the end of February 2004 according to the Financial Gazette (March 4-10, 2004)

Investment management has become an important feature of modern financial markets. Asset management is a delegation process, which shapes and aligns appropriate incentive structures for the owners of funds. This includes security analysis and portfolio management.

1.3 The Objectives of the Study

1. To determine the traditional means of investments and their respective return profiles.
2. To come up with time proven strategies of balancing the impact of inflation against the protection of the value of corporate assets
3. To show the extent to which Asset Management is a means of value preservation.
4. To analyze products being offered by Asset Management Companies and how these AMC's are delivering on their promises of high returns that are above inflation.
5. To evaluate the agent principal relationship that is a factor of the investment management process.
6. To find out the sustainability of the investment strategies which are currently employed by these investment management companies.

1.4 The Value of the Research

The investigation is beneficial to investors and asset managers and also to the academic society. Firstly the motivation of this research is to offer an independent evaluation of the investment vehicles that are offered during hyperinflationary times. The report ultimately enables asset managers to consider inflation insulating attributes of asset classes on offer before committing investment funds.

The next group to benefit is that of potential investors. The report offers empirical-supported recommendations on the optimal holding of the various asset classes within the context of a diversified efficient portfolio. The way investors, such as pension funds and insurance companies discern risk and return on specific investments and subsequently

make allocations in these assets has a significant impact on their investment practices and the performance of their funds.

The academic society will also prosper from this research as this study bridges the gap between textbook portfolio analysis techniques and practice. The academic society will benefit from such a study since to date in Zimbabwe there is limited research into the topic under investigation. The research highlights interesting investment attributes, which provide an impetus for further study.

1.5 Research Hypothesis

During inflationary times, investment managers tend to divert corporate investments into real estates because they usually retain value.

1.6 Research Design and Methodology

An exploratory/ qualitative research approach will be used to have an insight into the asset investment phenomenon. The main objective will be to pick a sample that is truly representative of the asset management firms in Zimbabwe. A stratified sampling method will be used between the various categories of Asset Management companies that is, Pension Fund and Insurance Fund companies to ensure that every sector is well represented. The population size will be determined from the total registered asset management firms. Due to the cost constraint it is intended to concentrate on the 2 main cities of Bulawayo and Harare where the majority of these firms are confined in order to achieve a high confidence level of the findings. The research will be conducted through physical interviews with the investment managers. A pre-designed list of questions will be used to give the interview a more chronological flow. Personal interviews allow both the respondent and the interviewer to clear up any misunderstanding. Responses will be coded and categorized to facilitate easy analysis of data. Tabular and graphical presentation of data will be preferred.

The research will consider the annualized and cumulative returns from the various asset classes within diversified portfolios that are offered by asset management companies.

This will cover the period from 1998 to 2003. The report will show data on the Optimal

holding of each asset class within a balanced diversified portfolio over the sample period. The research will also show a comparison of asset class returns with that of benchmark asset returns. In order to determine the optimal holding of a portfolio Modern Portfolio theory is used. The efficient portfolio theory is utilized as it is considered optimal. A study will also be carried out on the risk and return perceptions of asset managers of the various investments offered as this has a significant bearing on fund performance.

1.7 Investigative Questions

1. What are the traditional asset classes used by asset management companies?
2. What are the alternative investment vehicles offered by asset management Companies?
3. How do asset managers hedge against the loss of assets value caused by the effects of inflation?
4. How applicable are the various textbook techniques in portfolio management in Zimbabwe?
5. What are the investment philosophies that asset managers use to enhance their portfolio strategies?
6. What are the returns of the various asset classes in an efficient portfolio?
7. What are the relative risk and return perceptions of the asset managers in relation to the various asset classes?
8. How is the monetary policy announced at the beginning of the 2004 affecting the operations of Asset Management Companies? How is the regulatory framework also affecting investment operations in Zimbabwe?

2. CHAPTER 2 - LITERATURE REVIEW

2.1 Introduction

This chapter covers both theoretical and empirical literature. It is important to establish what theorists say about strategic investment vehicles as inflation insulators. Under theoretical literature review an extensive and exhaustive discussion of the investment process, portfolio analysis in asset management, relevance of the various theoretical models, the portfolio asset allocation theory, real estate versus inflation and past empirical literature are all covered.

2.2 Asset Management Theoretical Review

Asset management can be described as a systematic process of maintaining, upgrading and operating physical assets cost effectively. It combines engineering, financial principles and sound business practices coupled with economic theory, and provides tools to facilitate a more organized logical approach to decision making. Thus asset management provides a framework for both short and long term planning. Asset management decision-making framework hinges on performance targets and covers a broad time frame and draws its principles primarily from finance and economics. It provides the economic assessment of a trade off between strategies from the network or system level perspective between the different asset classes. It allows for a more complete comparative analysis of options for the individual project. According to the committee on Global Financial Systems (CGFS) (2003) "institutional asset managers are professionals who construct and maintain investment portfolios on behalf of clients, i.e. individual investors, companies, banks and pension funds" Assets under management could be fixed income securities, equities, money market instruments, foreign markets and commercial real estate.

The main principles of asset management are that an asset management system should be:

- Customer focused.
- Mission driven.
- System oriented and long term in outlook.
- Accessible and user friendly.
- Flexible.

It should also include:

- Strategic goals.
- Valuation and inventory of Assets under consideration.
- Performance measurement and prediction. Performance measurement and attribution are essential prerequisites for effectively monitoring delegated investment management. Assessment of relative performance will guide the investor's decision. For each class of investor, therefore, a specific set of rules will determine the distribution of risk and returns when viewed against the competitive structure of the industry which shapes the agent's behavior.
- Financial and economic analysis tools, advice on tax planning, regular stock market information.
- Links to the overall budget process.

Bodie Kane and Marcus (2002) define real assets and financial assets. Real assets of the economy are the land and buildings, knowledge and machines that are used to produce goods and services whereas financial assets are claims on the income that is generated by real assets. Individuals can choose between consuming all their current endowments of wealth today or investing for the future by holding on to financial assets. The money the firm receives when it issues securities is used to buy real assets. Ultimately the returns from a financial asset come from the income produced by the real assets which are financed by the issuance of the security. The investment environment is made up of:

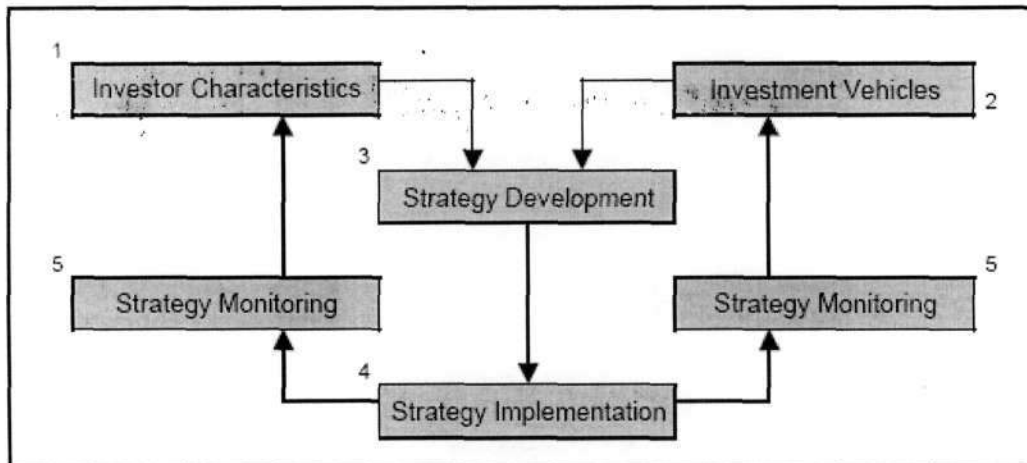
- Household sector.
- Corporate sector.
- Government sector.

The household sector makes decisions on what financial assets to hold depending on their economic situation that may include such things as risk preferences and taxes or retirement needs. In contrast the government and the business sector typically need to raise funds to finance real assets. The diverse tax and risk preferences for households create a demand for a wide variety of securities. In contrast business typically find it more efficient to offer relatively uniform type of stocks. This conflict gives rise to the creation of derivative instruments that are different from the traditional ones.

2.2.1 The Investment Process

Haim Levy (1999) clarifies the investment process, which by its basic nature is dynamic and ongoing. It offers five basic components (see figure 2.1)

Figure 2.1



Source: Haim Levy

The first component is that of the investor:

1. Who may either be an individual or an institutional investor. The investor should establish an investment policy, documents his/her respective objectives and constraints (characteristics). Derivatives attract three types of traders: hedgers, speculators and arbitrageurs. Hedgers use derivatives to minimize exposure, whereas speculators, take the opposite stance increasing their risk exposure in effort to gain returns. In addition arbitrageurs attempt to lock in a profit by simultaneously entering in into two ore more markets.

The second component:

2. Is the investment vehicle (instrument), which include asset classes, funds and specific securities available for investment. The next element is to maximize the competing constraints of the numerous investments and the investor's characteristics: known as strategy development.
3. Investment Strategy- A clear investment strategy is essential to developing a successful portfolio. Asset managers spend time with clients carefully analyzing their needs and expectations. Together they agree on the overall portfolio guidelines and develop a detailed set of criteria, which form the basis for all subsequent

decisions. Investors are generally risk-averse and their investment strategy involves their construction of a diversified portfolio of assets. This assumes that investors like returns, and will act rationally in making decisions on maximizing their returns for the inherent level of risk. This requires asset allocation and individual security selection, both of which are dependent on the investor's risk aversity. The strategy implementation follows.

4. Here portfolios need to be physically created and continually revised in light of transaction costs, changing economic and market conditions, changing investor characteristics. Now the investment process has begun, and strategy monitoring follows.
5. To cater for change.

This research project seeks to amalgamate the generic investment process as enunciated by Levy with particular concentration on strategic investment vehicles that are used as a hedge against inflation.

2.2.2 Principal/Agent Relationship In Asset Management

According to the CGFS (2003) delegated asset management involves an agency principal relationship in nature. At the core of asset management is the separation of ownership and control of financial wealth. However the investors (principals) find it worthwhile to contract with an investment manager (agent) based on the latter's investment skills or his competitive advantage in the industry. Investors would like the funds they invest to be used to the best advantage to maximize risk adjusted expected returns whilst on the other hand the investment manager is motivated by profits of his own. A way of controlling this potential conflict between the two parties is the manager's compensation contract.

2.2.3 Objectives of Portfolio Management

According to Bodie Kane and Marcus (2002) the portfolio objectives center on the risk-return trade off between expected returns that the investor wants, that is:

- How much risk they are willing to assume (risk tolerance).
- The individual or institution's preferences such as:

1. **Liquidity**-the speed with which an asset can be turned into cash at a fair price. The individual or institutional investor must establish on the minimum level of assets that they want in the investment portfolio.
2. **Time horizon**-This is the planned liquidation date of the investment. Horizon needs to be considered when selecting assets of various maturities such as bonds which can only be paid at stipulated maturity dates.
3. **Regulations**-Asset Managers have a fiduciary duty to restrict investments to assets that would have been agreed upon by a prudent investor. Specific regulations apply to specific investments and countries and every professional asset manager must be ready to defend the investment policy in a court of law.
4. **Taxes**-The performance of an investment strategy is measured by how much it yields after taxes.
5. **Unique needs** - there should be consideration for special circumstances such as a hedge against rising interest rates or inflation.

A convincing and comprehensive investment policy and philosophy is critical to the planning and achievement of goals for the funds under asset management:

- Outline the investment-related responsibilities of both the client and your company so as to assist in the management of the assets.
- Establish formal yet flexible investment guidelines incorporating prudent asset allocation and realistic total return goals.
- Provide a framework of regular and value adding communication with the client and your company.
- Create a benchmark of investment performance that are historically achievable and by which the Asset Management Company is measured over a reasonable time frame.

This investment policy must be dynamic, changeable to suit different macro economic conditions. It should be reviewed ideally annually as well in order to suit the changing market conditions.

2.2.4 Portfolio Analysis in Asset Management

Portfolio analysis theory is a useful tool in asset management. The main elements to be reviewed are portfolio asset allocation, diversification, optimum variance approach, measurement of portfolio risk, the capital asset pricing model and macroeconomic industry analysis. The methodology of determining an optimal portfolio requires the measurements of:

- Returns.
- Risk (standard deviation).
- Correlation coefficients for each asset to be included in the portfolio.

This can be performed on any portfolio but it is most commonly applied to asset classes. This is followed by asset allocation which involves the allocation of funds to specific asset classes. Individual asset classes have different levels of risk and return and will behave differently. At a time when one asset is appreciating in value due to the underlying economic conditions the other asset could be decreasing or at least not increasing as much in value with the same economic factors impinging on it.

2.2.5 Portfolio Asset Allocation

According to Franks-et al (1985), a portfolio is a representation of an investment in a collection of different securities or assets. Asset management basically involves portfolio management and efficient portfolio management entails proper portfolio asset allocation.

Greer (1997) sighted two main criteria that an asset class must satisfy-namely:

That it increases the expected utility of a portfolio. The utility or value of an asset is often determined by using a Sharpe Ratio, which indicates whether assets increase the risk adjusted return of a portfolio; and the returns cannot be replicated with combinations of other assets. Portfolio asset allocation refers to the process of opportunity funds available for investment among various investment classes namely Money market securities, Fixed income securities.

- Common stock.
- Real estate.
- International stock.
- Bonds, precious stones and collectibles.

Asset allocation decisions deal with attaining the optimal proportions of investments from different categories. Proper asset allocation means diversification into asset categories that translates to not putting your eggs in one basket. According to Bodie Kane and Marcus (2002) the real critical decision is how you divide up your funds between stocks bonds and super safe investments such as Treasury Bills. Asset mixes need to be varied to suit the investor's appetite for risk and the time horizon one plans to invest. The further away your investment horizon the more you should have in stocks. The closer you get you should lean towards bonds and money market vehicles. Gold and Real Estate give you a hedge against hyperinflation. The steps to follow in asset allocation are:

- Specify the return characteristics if all securities expected returns, variances and co variances).
- Establish the optimal risky portfolio using the portfolio mean variance price to determine the portfolio weights.
- Allocate funds between the risky portfolio and the risk free assets.

They are also pre packaged computer products for portfolio modeling in the market that can be used to determine suitable portfolios. The Portfolio Modeling and trading modules provide flexible, spreadsheet-like environment for the definition of target weights at any level of an asset allocation hierarchy. This module enables the fund managers to analyze the portfolios under their management and gauge the impact of simulative scenarios. Once happy with the investment structure, the investment manager can automatically create and pass the proposed orders from the models to the order control modules for placement and tracking of the market place.

2.2.5.1 Portfolio Allocation Versus Diversification

Diversification is a strategic device for dealing with risk. The ideal form of diversification is to engage in activities that behave in exactly the opposite direction. The formal theory of diversification was developed by Markowitz (1952) and this can be

reduced to the maxim of don't put your eggs in one basket. Since no one can predict precisely which investments will fall into which category in any one period, it would then be rational to spread one's funds over a wide set of investments. The opportunity to eliminate all risks emanates from the perfect negative correlation or covariance between investments. The only risk that is diversifiable is firm specific risk and this risk is associated directly with a firm's fortunes for example a fall in Oil prices or key staff changes within a company that may hurt the company. Portfolio risk does fall with diversification but it cannot be eliminated to zero due to the presents of undiversifiable risk being risk associated with events that affect all firms for example inflation or an upward movement in interest rates.

2.2.5.2 Optimum Mean Variance Rule Approach

Markowitz (1952) examined whether there was a possibility of investors finding an ideal balance between risk and return that could minimize risk while maximizing potential gains. He observed that the value of diversification lies mainly in the way specific assets perform relative to each other (correlation) than in the way the number of assets an investor owns. According to this model, the optimal way to minimize portfolio risk is to select a portfolio of assets with low covariances. The lower the correlation between assets, the greater the chances of reducing portfolio risks. Thus the mean variance optimization gives a precise mathematical meaning to the maxim of 'don't put your eggs in a single basket'. In detail the variance of a portfolio is the weighted sum of the elements of the covariance matrix with the product of the investment weights. Even if the co variances are positive, the portfolio standard deviation is less than the weighted average of the component standard deviations as long as the assets are not perfectly positively correlated. Portfolio diversification is of value as long as assets are positively correlated. The efficient frontier is the graphical representation of a set of portfolios that maximize expected returns for each level of portfolio risk. A portfolio manager identifies the efficient frontiers by first establishing estimates for the expected returns and the covariance matrix. This input list is then fed into an optimization program that reports as outputs the investment mix or proportions, expected returns and standard deviations of the portfolio on the efficient frontier.

However Green and Mollified (1952), Lummer, Ripe and Siegel (1995) showed that optimization models were difficult to use in practice and that the results were unintelligent and counter intuitive. The asset returns, volatilities and correlations are very cumbersome to compute, if not impossible to forecast accurately.

Despite its shortcomings, portfolio mean variance analysis still remains a powerful technique still in use in asset management.

2.3 Measuring Portfolio Risk

The riskiness of a portfolio expresses the extent to which the actual return may deviate from the expected return. This maybe expressed in terms of its variance on the expected returns. 'Returns' is a term that all investors easily understand. The total return of a portfolio is measured by combining the income and the capital gain or (loss) from assets and their respective weightings. Returns are usually expressed as percentages that are representative of a particular period. The co-variance σ_{ab} (two assets) is the covariance between A and B. The correlation coefficient is a measure of the degree to which two investments move together. The value of the co-efficient ranges from -1 and $+1$. Investments that have a coefficient of -1 are perfectly negatively correlated; thus their values move simultaneously in opposite directions and magnitude. A coefficient of $+1$ demonstrates a perfectly positive correlation with values moving simultaneously in the same direction and magnitude. A coefficient of 0 illustrates no relationship at all.

2.3.1 Capital Asset Pricing Model

This model was developed by Sharpe (1964). It explains how individual securities are valued or priced in efficient markets. This involves discounting the future expected returns from a security at a rate that adequately reflects the degree of risk incurred in holding that security. A major contribution of CAPM is the determination of a premium for risk demanded by the market from different securities. It offers an explicit guide to measuring the precise reward investors should seek for incurring a given level of risk.

The Beta of a portfolio measures the sensitivity of a portfolio's return to the return on the market as a whole and this is equal to the weighted average of the assets making up the portfolio.

The model also divides the risk of holding risky assets into systematic (market) and unique (specific) risks. Therefore we can state that:

Total risk is = market risk + specific risk.

Market risk is the component of total risk of a security that is linked to the market portfolio movements.

Specific risk is the risk that is specific to the individual asset for example poor management that leads to poor profits. Specific risk can be diversified away primarily because of positive and negative events affecting individual assets. Systematic risk is undiversifiable. Even if an investor was perfectly diversified by holding all individual assets in the market, this portfolio would still be risky in the sense that it is subject to the ups and downs of the market as a whole. Thus only systematic or non-diversifiable risk is measured by Beta and this would deserve some risk compensation in the market.

The Arbitrage Pricing Theory has also been developed to compliment the CAPM model. The exploitation of security mispricing in such a way that risk free economic profits may be earned is called arbitrage. According to Bodie, Kane and Marcus (2002) this involves the simultaneous purchase and sale of equivalent securities in order to profit from discrepancies in their price relationship. An arbitrage opportunity arises when an investor can construct a zero investment portfolio that will yield a sure profit. To construct a zero investment portfolio one has to be able to sell short at least one asset and use the proceeds to purchase (go long on) one or more assets. Investors will sell short as a measure of protection in anticipation of a fall in price. This happens to an investor who owns the stock and wants to lock in a price to be able to sell the stock should the price fall. In order to deliver the stock to the purchaser, the short seller will borrow the stock from a broker or dealer or an institutional investor. The short seller later closes out the position by returning the stock to the lender by purchasing equivalent securities on the open market. Short selling is also utilized to hedge the risk of a long position in the same security or related security. Short selling can incur significant losses if the market moves against them. Implementing a trading strategy that includes short selling must fit one's personal objectives, knowledge and risk levels. The most important benefits for selling short are; market liquidity and pricing efficiency. Substantial market liquidity is provided through short selling by market professionals, who facilitate the operation of the markets of offsetting temporary imbalances in the supply and demand of securities. Short sales add

to the trading supply of stock available to purchasers and reduce the risk that the price paid by investors is artificially high due to temporary contraction of supply.

2.3.1.1 Relevance of CAPM in Asset Management

CAPM is used in asset management to design a portfolio to suit the risk profile of an investor. Risk-averse investors have as many low Beta assets as possible in their portfolio. This CAPM model can be used to adapt a portfolio to suit market conditions. Efficient markets require that prices fully reflect all buy and sell interest. When a short seller speculates on a downward movement in a security, his transaction is a mirror image of the person who purchases the security based upon speculation that the security price will rise. Both the purchaser and the short seller hope to profit by buying the security at one price and selling at a higher price. Market participants would profit from a perceived divergence of prices from true economic values. Arbitrageurs also contribute to pricing efficiency by utilizing short sales to profit from price disparities between a stock and a derivative security or an option on that stock.

2.4 The Efficient Market Hypothesis (EMH) and Asset Management

According to Dobbins, Witt and Fielding (1996) the Efficient Market hypothesis (EMH) suggests that at any point in time asset prices fully reflect all information, with any new or shock information being immediately incorporated into the share prices. The abovementioned authors also suggest that a great deal of individuals and financial institutions participate in the market by buying and selling with real money: they have access to a great deal of information. These range from economic forecasts, stockbroker's reports, newspaper articles, investment advisory services and company reports and they know the current market prices of all quoted securities and have access to share price history. The stock price changes that are random and unpredictable indicate a well functioning or an efficient market. Only new or shock information will cause prices to change, but because new information cannot be predicted, hence the randomness and unpredictability of price changes.

Vale (1988) suggests three forms of EMH: The weak form, the semi strong form and the strong version. The weak form suggests that all the past information such as prices and

trading levels be included in the current price. Thus future prices cannot be predicted from price data per se. The semi-strong form requires that all publicly available information such as new product developments and financing difficulties is included in the current prices. It attempts to measure the extent to which share prices reflect all publicly available information. Investors anticipate and react to publicly available information relating to stock splits, earnings announcements, dividend announcements forecasts and large block trades. The last version of EMH is the strong-form which requires that all information available be included in the current price. This includes information available to any corporate insiders and specialists.

2.4.1 Efficient Market Hypothesis and its implications on Asset Management

In efficient markets there are no rewards for taking avoidable risks. Investors can avoid risks by diversification. Rewards are offered only for market risk measured by beta, which is unavoidable. It would therefore be sensible to diversify away specific risk and construct a defensive or aggressive portfolio at any given level of market risk. Since the efficient market advocates that stock prices are at fair levels, given all available information it makes little sense to buy and sell securities frequently considering the large trading costs involved without increasing expected performance. In an efficient market there is a linear trade off between risk and return along the lines suggested in the CAPM model. Investors expect higher returns for accepting greater risk.

If the EMH is not entirely accepted, a portfolio manager should engage in active asset management that capitalizes on profit from stock selection and/or market timing. A manager who rejects the semi-strong form of EMH believes that it is possible to use superior analytical skills to construct a portfolio that can consistently outperform the market. Such a manager uses fundamental analysis to identify undervalued securities, which are then used to construct a portfolio with the desired risk level. And if a manager rejects the weak form of EMH and believes that it is possible to beat the market by identifying when a given security on the market is overbought or oversold. A comparison of the predicted price with the actual price level indicates whether the security on the market is priced too high or too low.

2.5 The Macroeconomic and Industry Analysis

To determine the proper price of a firm's stock, the asset manager must forecast the dividend and earnings that can be expected from the firm. According to Bodie Kane and Marcus (2002) this forms the heart of fundamental analysis—that is the analysis of the determinants of value which includes earnings prospects of the firm.

The most important first step is to do what is termed a top down analysis of the firm's prospects which must start with the global economy. The international economy may affect the firms export prospects;

- Price competition from other competitors.
- Profits from foreign investments.
- Political risks in the global environment.
- Changes in macroeconomic policies in some countries.
- The exchange rate between trading countries.

The next step is to evaluate the macroeconomic environment in which the firms operate.

The ability to forecast the macro economy ahead of your competitors can lead into spectacular investment performance. The major areas to focus on are:

- Statistics on the Gross Domestic Product-This statistic provides a measure of economic activity more focused on the production side of the economy.
- Employment-This is the percentage of the total labor force who are yet to find work. This rate of unemployment measures the extent to which the economy is operating at full strength.
- Inflation-This is the rate at which the general level of prices is increasing. High rates of inflation indicate a demand for goods and services that are outstripping the productive capacity. This causes an upward pressure on prices.
- Interest rates-High interest rates reduce the present value of future earnings thereby curtailing the attractiveness of investment opportunities. For this reason interest rates are the key determinants of business investment expenditures.
- Budget deficit-This represents the difference between government expenditure and revenues. Huge amounts of government borrowing can force up interest rates by crowding out private borrowers and choking the business investment.

- Economic outlook-Consumers optimism or pessimism can affect the levels of consumption and production. Businesses will increase production if they anticipate higher demand for their products. Examples of positive demand are reduction in tax rates, increases in money supply, increase in government spending or increases in foreign export trade. The supply side can also be affected by changes in the price of imported raw materials, drought periods, changes in production costs e.g. labor costs.

The asset management analyst must also look at the Fiscal Policy which refers to the government spending and tax actions and is the portion of the demand side management. The common way of assessing the overall impact of the fiscal policy is to look at the government's budget surplus or deficit which equates to the difference between expenditures and revenues.

Monetary Policy refers to the manipulation of the money supply to affect the macro economy and is the other main leg of the demand-side policy. This is effected mainly through interest rates. Increases in money supply lower short- term interest rates ultimately encouraging investment and consumption demand. As the quantity of money in the economy increases, investors will find that there portfolios have too much money. They will rebalance their portfolios by buying securities such as bonds, forcing bond prices to go up and interest rates down.

The economy also experiences periods of expansion and contraction. The asset manager needs to appreciate the recurring nature of periods of recession and recovery in the business cycle. In contrast to cyclical firms, defensive industries are less sensitive to the business cycle. These are firms that produce goods for which sales and profits are less sensitive to the changes in the state of the economy.

Industry Analysis is equally important for the same reason that macroeconomic analysis is. It is difficult for a firm to perform well in a troubled industry. The asset analyst considers the following attributes:

Industry life cycles which is described by four stages, start up stage, characterized by fast growth, a consolidation stage characterized by growth which is less faster than the first

stage, is a stage of relative decline, where the industry is growing less rapidly than the rest of the economy.

2.6 Performance Measurement

Owners of managed portfolios are faced with the basic difficulty of adequately measuring the performance of the investment managers hired to manage their portfolios, which involves judgments of whether the net return on a portfolio is an adequate compensation for the portfolio risk. Given an investor's basic problem of assessing portfolio performance, benchmarks will be needed to put an individual's portfolio performance into perspective, and thereby making it useful to assess actual investment performance against some overall index of performance. Such an index would have to measure the actual returns of traders relative to some equilibrium risk return relationship. Any performance therefore has to consider the return relative to the risk of the portfolio and then rank alternative portfolios accordingly.

There are 3 basic performance measures known as the Sharpe ratio, the Treynor Index and the Jensen' alpha.

- 1) Sharpe (1996) studied the performance of 34 mutual funds during the period 1954-63. He established that the linear relationship predicted by the CAPM model appeared to hold. Funds with large average returns showed greater variability than those with smaller average returns. Good performance was found to be linked with low level expenses. The study generally supports the view that Capital markets are efficient and that good portfolio manager's concentrate on evaluating risk, providing diversification and spending a small proportion of the fund to scanning the market for under-priced securities.
- 2) Jensen (1968) Jensen' alpha is defined as the difference between a portfolio's actual average return and the equilibrium return that should have been earned by the portfolio given the market conditions and portfolio risk. By using the CAPM model to determine equilibrium returns, alpha can therefore be measured as the deviation of a portfolio return from the securities market line.

- 3) The Treynor performance index, T , is a reward to risk ratio. When using the CAPM, values of the Treynor Index should be the same for all funds when the market is in equilibrium.

2.7 Asset Management and Inflation

According to Bradley R Schindler (2000) inflation is an increase in the average level of prices of goods and services, not a change in any specific price. Inflation is measured by the Consumer Price index that is drawn from a basket of goods. If there is a delay in spending income earned inflation reduces the real value of your savings. Inflation can be reflected in the distinction between nominal income and real income. Nominal income is the amount of money received at any given point in time whereas by contrast real income is the purchasing power of that money as measured by what the real dollars that you hold can buy. According to Hoesli and McGregor (2000) 'nominal' means in current money value terms and real refers to the purchasing power of the money in terms of some base year. The difference is inflation. As prices of goods increase the real income falls and inflation also breeds uncertainty among investors that results in lack of rational economic planning on their part. Inflation has implications on portfolio allocation and investment. The longer the investment time frame the more significant inflation becomes in determining the real value of the investment at the end of the term. Investors must therefore be compensated for the loss of purchasing power as well as for time.

Inflation is also determined by rising interest rates. Interest rates play a key role in the general business cycle and the financial markets. When interest rates change, or interest rate expectations change, the effects are far reaching. When rates rise, consumers spend less which cause retail sales to slow, which leads to reduced corporate profits, a declining stock market, and higher unemployment. The effect of the declining stock market is compounded by the fact that higher interest rates make interest bearing investments more attractive, causing an exodus of money from the stock market. The actual rate of inflation is calculated by the difference between the current price level over the price in the previous period. The formula is given as $\text{a change in time} = \frac{\text{CPI} - \text{CPI } t-1}{\text{CPI } t-1}$

The expected inflation is a rate that is formulated based on an individual expectation and the information available in the previous period ($t-1$). It captures the expected changes in the purchasing power at the beginning of the period. The unexpected inflation on the

other hand reflects the random errors observed between the actual and the expected inflation. These errors are due to inefficiencies in the market were not all past information has been processed by the market.

According to Bodie Kane and Marcus (2002) the real rate of return an asset is approximately equal to the nominal rate minus inflation rate. Because investors are concerned about the real returns- the increase in the purchasing power it could be expected that as the inflation rate increases, investors will demand higher nominal rates of return on their investments. This higher rate is necessary to maintain the expected real return offered by an investment. Irving Fisher (1930) defines inflation as a phenomenon whereby there is a sustained and inordinate increase in the general price levels. He argued that the nominal rate ought to increase one for one with the increase in the expected inflation rate. If we use the notation $E(i)$ to denote the current expectation of the inflation rate that will prevail over the following period, then we can state that $R=r+E(i)$ This equation has been debated and empirically investigated. The equation implies that if real rates are reasonably stable, then increases in nominal rates ought to predict higher inflation rates.

2.7.1 Hedging Against Inflation

Hedging an investment involves finding a way of mitigating the risk of a value of the position or positions that you will have taken, while typically maintaining the opportunity for appreciation. Hedging basically means managing risk. Typically a manager employs a particular hedging technique in order to mitigate against a particular type of instance, for example, market risk –such as in anticipation of rising inflation, rising interest rates or variability of a firm's value that is due to uncertain exchange rate changes.

According to Thomas Shneeweis (2002) the alternative investment universe consists of a number of investment strategies that offer risk and return opportunities not commonly found in traditional long only stock and bond investment. Hedge funds are described as skill –based investment strategies. Skill based strategies obtain returns from the unique skill or strategy of the trader. As a result, hedge funds are also termed absolute return strategies as these returns do not depend on the underlying traditional stock and bond

markets. Because hedge funds are actively managed, trader skill is certainly important, as are basic trading strategies behind most hedge fund investments. Hedge funds returns have also been seen to be driven by market factors such as changes in credit spreads or volatility, so one can think of their returns as a combination of the manager's skill and the underlying return to the strategy itself.

Alternative investments' refers to investments in assets other than traditional ones like shares and bonds. An alternative investment literally means any investment that is an alternative to traditional assets like common stock and bonds. Hedge funds, private equity funds, venture capital funds commodity funds/managed futures and real estate are some of the many investments that fall into this category.

Most alternative investments are designed to generate relatively higher returns by applying sophisticated trading strategies across a diversity of asset classes like shares and bonds whilst limiting risks. For example a market-neutral long/short equity fund, could be designed to profit from both rising as well as falling equity markets. Simplistically, this is achieved by buying shares that are expected to go up, while selling short. As long as the split between the longs and the shorts are well researched and implemented the effective returns for the strategy will be largely market neutral.

It is the independence from traditional asset class performance that makes such investments attractive for diversification. Introducing an exposure to such an alternative investments into a diversified portfolio of traditional asset can thus, if implemented correctly and to the right proportion, enhance the risk return profile of your investment portfolio. The uncertainty surrounding returns from traditional assets over the last few years has prompted investors and professional funds managers, to introduce alternative assets in their investment portfolios for diversity and stability of returns. Empirical evidence shows that 15-20 per cent of portfolios has been allocated to alternative asset classes.

Typically these investments have relatively higher initial investment requirements and hence are suited better for high net worth individuals or institutions. As the industry is

growing promoters of such investments are packaging products that are more accessible to the small investor. The acceptance of these alternative assets greatly depends on personal investment goals, investment horizon and appetite for risk.

According to Karavas (2000) most investors think of alternative investments as being private and illiquid; Growth in investor demand worldwide for hedge fund products indicates investor appreciation of the potential benefits of trading in derivatives markets. Derivatives are financial securities whose values depend directly on, or are derived from, the value of another asset. According to Bodie Kane and Marcus (2002), derivatives are instruments that provide payoffs that depend on values of other assets such as commodity prices, bond and stock prices or market index values. They are also termed contingent claims, as their values are contingent on the values of other assets. Some of the most traded derivatives are options and futures contracts. A call option gives its holder the right to purchase an asset for a specified price called the exercise price or the strike price, on or before a specified date. The put option –The purchase of a put option permits investors to downside risk of a stock while retaining the opportunity of stock appreciation. The put option permits the purchaser of the put option to sell certain number of securities at a predetermined price (strike price) within a predetermined time frame.

- The primary advantages of a put -option are that the investor retains the appreciation potential on the optioned stock.
- The investor's maximum loss on the put option is the amount paid for the option.
- No capital gains tax is triggered on the stock if the transaction is done properly.

The futures contract calls for delivery of an asset or in some cases its cash value at a specified delivery or maturity date for an agreed-upon price called the futures price to be paid at contract maturity. According to Glen Arnold, (2002) spectacular losses have been made and a number of companies brought to total collapse through the employment of derivative instruments. In many of the financial scandals derivatives have been used or misused to speculate rather than to reduce risk.

2.7.2 Investment Classes: Value and Inflation

In today's financial environment investors are faced with an extensive entourage of assets and investment opportunities. An investor is an individual or an organization which is willing to forgo consumption today to achieve higher consumption in the future.

Consequently, investment is the use of financial capital in an effort to create financial capital in the future. All investors are faced with a seminal question of; 'what should I invest in'. Investment instruments can be broken up into three major categories: bonds, stocks, and derivatives.

2.7.2.1 Fixed Income Securities (Bonds)

Hoesli and MacGregor (2000) describe a bond as a paper asset and as a form of debt. The bond is bought from the issuer for an amount known as the par value. In return the investor is entitled to a guaranteed nominal income known as the coupon each year and to have the capital sum paid on maturity date. Bonds are usually issued for periods ranging from 5 to 25 years. Some are known as undated and have their income received in perpetuity and the initial purchase price is never repaid to the issuer. The government, municipal authorities or private companies can either issue bonds, which are usually regarded as virtually risk free and thus they offer a lower required return. Just as a government issues bonds to fund their activities so do corporations. Corporate bonds are considered riskier than Treasury bills and they compensate their high risk with higher yields. Default risk caused by bankruptcy is usually associated with this type of bonds. The yield of a specific corporate bond depends on several factors, the most important being the financial health of the corporation and prevailing interest rates. Bonds are affected by inflation. If actual inflation is other than expected, real value of the income and the par value will be different from the expected.

Investors rarely, if, ever, accept negative real yield on *ex-ante* basis, but that is the case today in the case of extraordinarily high levels of risk aversion. Fixed income investors tend to have asymmetrical risk tolerance—they are tolerant of variable positive returns, but are intolerant of a return of less than zero, often because negative returns find their way into an income statement as a loss. Nominal rates of interest are made up of several components, each of which vary in size at different maturities;

- Expected inflation.
- + An associated inflation uncertainty premium.

- The real rate.
- + An associated real rate uncertainty premium.

The asset manager can remove the first two components by using inflation-indexed bonds. Several factors influence the demand for long bonds versus short bonds;

1. Compensation for interest rate risk.
2. The cumulative effect of inflation.
3. Expectations of inflation in future periods or years.
4. Expectations for real and reinvestment rates in future years.

There are several ways of mitigating against the risk of inflation and rising interest rates

- Shorten the Portfolio duration-The simplest way to decrease the risk of rising rates is to shorten the aggregate portfolio duration. Unfortunately, in a market attuned to the possibility of higher rates, this is a costly strategy. The portion of the yield curve from two to eight years, where most bond portfolio investors tend to be concentrated, is extremely steep. Every step down the curve exacts a substantial cost to the portfolio running yield. As interest rates rise and inflation persists, the market value of existing fixed income portfolios will erode if left unchanged and unrealized capital gains will be transformed into unrealized capital losses.
- Use inflation-Indexed bonds-Given the possibility of higher real rates at the short end of the life, inflation indexed bonds are most appropriately used to reduce inflation-based rate risk at longer maturities. Treasury Inflation Indexed Securities (TIIS) can also offer some protection against the less likely economic scenario. The redemption value of TIIS is adjusted for the CPI. In a deflationary environment, this adjustment could be negative. However, the redemption value will not be adjusted below par even when CPI is negative.
- Invest in a spread duration Moving "down in quality" is an effective way of reducing interest rate risk. Lower quality debt obligations pay a higher coupon, therefore, making their Zero return rate rise substantially higher than Treasuries. In less quantitative terms, the extra coupon in credit spreads provides some cushion to the portfolio's return if rates rise. Past empirical evidence has generally agreed that bonds do not offer a significant hedge against inflation. In the United States

Hartzell Heckman and Miles (1997), Coleman, Hudson Wilson and Webb (1994). In the United Kingdom (Hoesli MacGregor, Matysiak and Nanthamakuraman (1997), and in New Zealand-9Newell and Boyd (1995),Australia (Newell,(1996) have demonstrated this evidence.

2.7.2.2 Common Stock

According to Stein (2001) shares represent a share of ownership in a company. Shares are issued in different classes, ordinary, preference, convertible and denoted in nominal value terms. Vale (1998) also describes a share as a paper asset, which carries with it a share in the capital and the income of the company plus a share in the management of the company through an allotment of voting rights.

Equities are high- risk investments and their prices are volatile since the price reflects supply and demand for the share. Shares in a single company are usually considered high risk because of lack of diversification. The degree of risk depends on the sector's in which the company operates. Shares are highly marketable securities and there are traded through the local Zimbabwe Stock Exchange. Kane, Bodie and Marcus (2002) also describe the two most important characteristics of common stock being the residual claim and the limited liability claim. Innovative portfolios have also been developed such as passive index funds with low cost and long-term features.

Passive or index based investments describes an investment philosophy where investors do not chase performance, nor pick individual stocks, nor try to guess the direction to which markets are headed. Passive investors ignore market hypes and remain disciplined and diversified across every sector and investment type. Passive portfolios are especially appropriate for investors who desire investments with low turnover and low cost. A typical such portfolio normally holds allocations to equity and fixed income securities. According to Bodie Kane and Marcus (2002) a passive strategy describes a portfolio decision that avoids any direct or indirect security analysis .A good example of passive risky asset would be a well diversified portfolio of common stocks. The capital allocation line for a broad index of common stocks is the CML (Capital Market Line). A passive strategy generates an investment opportunity set that is represented by the CML.

The empirical studies in the United States on common stocks supports the hypothesis that stocks offer no significant hedge against inflation Fama Schwert (1977), Hartzell Kekman and Miles (1987), Liu, Hartzell and Hoesli (1997), and Hudson Wilson and Webb (1994) and Gultekin (1983) in the United Kingdom. Hoesli and MacGregor, Matysiak and Nanthakumaran (1997) also showed that the capital returns on stock did not provide a hedge against inflation but the income of the stock.

2.7.2.3 International Stock

According to Kane Bodie and Marcus (2002) the addition of international stocks to domestic stocks enhances the power of portfolio diversification. Global diversification allows investors to purchase securities directly from foreign capital markets. Examples of global investments include, international real estate, foreign currency and investments in world indexes and regional equity markets. There are risks associated with international investments.

- Exchange rate risk- Shapiro (1995) defines exchange rate risk as the variability of a firm's value that is due to uncertain exchange rate changes. A movement of exchange rates can have a major effect on the value of a firm. Exchange rate risk imparts an extra source of uncertainty to an investment denominated in foreign currency.
- Political risk- According to Kane, Bodie and Marcus (2002) political risk means the possibility of the expropriation of assets, changes in tax policies and institutional restrictions on the exchange of foreign currency for the domestic currency.

Foreign currency risk can be hedged by the use of forward market such as Forward foreign exchange contracts. Forward foreign exchange contracts are agreements that are entered into today but the currencies are exchanged in the future. The forward exchange rates used will reflect the differential in interest rates between the two countries. This is as per the interest rate parity which is defined as the relationship between today's spot exchange rate, the expected future spot rate and the inflation rate. According to Buckley (1992) the interest rate parity is neatly defined as the condition that the interest differential should equal the forward differential between two currencies. Forward option contracts are also used to hedge against foreign exchange risks. Option forward contracts

offer the same arrangement as the forward contract except that there is a choice of dates on which the user can exercise the contract which can either be:

- On any date up to a specified date or,
- At any time between two future dates

Money markets can also be used to hedge against currency risk. The idea is to sell or buy the foreign currency at the spot rate today thereby fixing the exchange rate today and eliminating the exchange rate risk

2.7.2.4 Property and Real Estate

According to Hoesli and MacGregor (2000), direct property investment involves the rights of ownership to a piece of land, typically with a building. It can be a direct purchase of a residential or commercial property or indirect investment through shares in the property market or units in a property fund. For commercial purposes, a residential property can be occupied as a holiday home or can be let. Property can be acquired through direct investment through an estate agent Stein (2001). In the long run property is difficult to diversify because of its indivisibility.

Its main risk is liquidity due to the larger initial outlay required and its indivisibility.

Property is held in a portfolio as a long-term growth investment and as a hedge against inflation. Property also delivers a substantially better cash flow than shares. Income from rentals is much greater than share dividends and can be escalated to suit high inflationary conditions.

Tien Foo Sung-Swee Hiang, Yvonne Low (2002) empirically tested the inflation hedging characteristics of real estates and financial assets in Singapore over a period of 21 years ranging from 1978-1998. Results showed that real estate provides a better hedge against inflation than does stock and securitized real estate. They concluded that investing in industrial properties is the most effective hedge against both expected and unexpected inflation. When the inflation hedging characteristics are tested in different inflationary environments residential property' hedging performance is also effective against low and high inflation regimes.

For the investors holding assets for the long-term returns, inflation is always of great concern because high inflation erodes the real returns accruable in the future. Real estate offers as a superior alternative investment to the traditional assets such as stocks, Treasury bills and corporate bonds during periods of high inflation. Empirical studies by Fama and Schwert (1997) showed the inflation hedging abilities of assets in different countries. These studies have been supportive of the hypothesis that real estate returns move on a one to one correspondence with inflation rates.

For the real estate market in the United States, the evidence of positive hedges against inflation and in particular against expected inflation have been consistent Fama and Schwert (1977) Bruggen, Chew AND Thebodean 1984, Hartzell, Heckman & Miles (1987), Coleman Hudson, Wilson Webb (1994), Liu Hartzell and Hoesli (1997). The low inflation rate in the 1980's was identified as one of the factors that had contributed to the insignificant real estate performance against unexpected inflation.

In the United Kingdom real estate provides sound protection against inflation (Linmack & Ward (1998), Hoesli and MacGregor, Martysiak and Nanthakumanan (1997).

According to a research study conducted by Elaine M Worzala and Vickie L Bajtelsmit (1997) most researchers have concluded that a well-diversified portfolio should contain at least 10%-20% of real estate. The decision making process of how much of real estate should be included differs by size and type of fund which makes generalizations across funds inappropriate. This is exacerbated by a general disagreement about the classification of REIT shares (that is if they are real estate or common stock).

According to previous research by T Rossen, Wharton School, University (internet) of Pennsylvania investors should consider the performance enhancement and risk reduction potential of REITs in their portfolio construction process. A REIT's allocation serves to diversify a stock and bond portfolio while providing competitive rates of return. The income component of REIT returns and the relative consistency of earnings based on a highly visible revenue stream make REIT an alternative worth considering in the face of broad market volatility.

2.7.2.5 Money Market based investments

An investor deposits money with a banking institution to be made available on demand or from a pre-agreed notice period Stein (2001). The institution pays the investor interest in return for the use of money. These are short term 30 to 90 days, highly marketable and can be easily liquidated should other investment opportunities arise. Where the rate of inflation exceeds interest rate the real purchasing power of the capital will be eroded even if the nominal value is maintained. Accounts are simply opened or closed, or certificates or bonds subscribed or redeemed. Risk -averse investors tend to hold more of these money market securities in their portfolios.

2.8 Discounted Cash Flow Techniques

The Net Present value and the internal rate of return techniques both being discounted cash flow methods take into account the time value of money. According to Glen Arnold (2002) there are 3 elements to the time value of money:

- Time –Individuals prefer to have \$1.00 today than \$1.00 in 5 years time. They are predisposed towards impatience to consume thus they need an appropriate reward to begin the saving process.
- Inflation The price of time is the same as interest rate needed to compensate for time preference and loss of purchasing power.
- Risk -The promise to receive money some years later carries with it an element of risk. Risk simply means that the future return has a variety of possible values. Thus the issuer of security, whether it is a share, bond or a bank account must be prepared to compensate the investor for time, inflation and risk involved otherwise none will be willing to buy the security.

The discounted cash flow conversion process is achieved by discounting all future cash flows by the time value of money, thereby expressing them as an equivalent amount received at time zero. The decision rules for Net Present Value are: $NPV > 0$ Accept $NPV < 0$ Reject.

The required rate of return = Risk free rate+Risk premium.

Another way to calculating the return to be delivered by cash flows is by determining the internal rate of return. This involves calculating the rate of return, R, which will equate

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the price to the present value of cash flows, in other words the net present value is equal to zero. The rate of return is known as the internal rate of return. It represents the expected return from an investment and is derived from the market price and the expected cash flows. The IRR rule is > If the IRR is greater than the required rate of return then the investor should acquire or invest.

2.9 The structure of the Asset Investment Industry in Zimbabwe

The asset management industry in Zimbabwe consists of both individuals and institutional investors. There are 23 registered asset management companies that offer a wide variety of investment products. According to Bodje Kane and Marcus (2002) investment companies are financial intermediaries that collect funds from individuals or institutional investors and invest these funds in a potentially wide range of securities or assets.

In the Zimbabwean case, the AMC's emerged in the 1990's after the liberalization of the financial sector. From the research it emerged that there was less competition in the industry with most AMC's offering traditional investment products such as Negotiable Certificates of Deposits (NCD's), Treasury Bills and government stocks. By then according to the respondents the macro-economic conditions were fairly stable and predictable. Competition in the investment industry increased with the advent of the Zimbabwe Stock Exchange with equities being added to the list of investment products. The number of AMC's increased rapidly to 57 by December 2003 and most of them were not registered due to a general laxity in the regulations pertaining to the financial sector at the time. The study established that most of the Asset Management firms are offering:

- a) Equity Blue Chips.
- b) Property fund/real estate.
- c) Government stocks.
- d) Money market securities.
- e) Indexed funds.

The study also established that most of respondents consider the following in their asset allocation decision.

- a) The expected returns and the risk profile of the asset.

- b) Real returns above inflation.
- c) Risks that are commensurate with the client's appetite and risk profile.
- d) Liquidity of the particular fund.
- e) Divisibility of the fund.
- f) Long- term capital appreciation of the asset.

Most of them use the conventional Portfolio Analysis tools in their asset allocation decision. In addition to the theoretical considerations they also visit the firms to get an on the ground appreciation of the investments that they would like to engage in. The industry has not evolved much since its inception due to what respondents called adverse macro-economic conditions. Factors like the restriction on foreign currency movement mean that the Zimbabwean investment industry has not been globalized. The scandals that beset the financial sector at the end of 2003 have affected investor confidence in the industry with investors becoming more risk averse.

2.10 Conclusion

This chapter has covered very useful theoretical ground which is essential for the study. The researcher was able to identify what theorists say about the research problem. Empirical data was also gathered to support what happens in other economies. This chapter assisted significantly in the foundation of the investigative questions. Overall, from what is covered in this chapter it is clear that the hypothesis of the study is valid.

3 CHAPTER 3 - Research Methodology

3.1 Introduction

This chapter is concerned with the research design adopted, research instruments, the data collection procedures and also the types of data collected. A comprehensive description of each of these shall be covered. The chapter contents enhance the validity of research findings and also the credibility of the recommendations of the research for implementation.

3.2 Research Design

Structured personal interviews will be conducted on selected asset managers from the different investment companies. In addition to the interviews the research intends to extract data from internal reports obtained from these asset management companies. According to Bodie Kane and Marcus (2002) a personal interview is a face to face communication or a two way conversation initiated by an interviewer to obtain information from a respondent. The structured or standardized interview which uses specific questionnaire will be adopted for this research. A standardized questionnaire is administered where specific questions are asked in a set order and in a set manner to ensure that there is no variation in between interviews.

Respondent answers are recorded on a questionnaire form during the interview process and the completed questionnaires are most often analyzed quantitatively. The structured interview usually denies the interviewer to alter questions, change their sequence or alter the wording of the questions.

The advantages of structured personal interviews:

- **Depth of information and detail:** The information gathered in personal interviews exceeds by far the information collected via telephones and self-administered studies.
- **Improving understanding:** Personal interviews can note the conditions of the interview, probe with additional questions and gather supplementary information through observation.
- **Adjusting to respondent's conditions;** Interviewers can set up and control interview conditions e.g. adjusting to language requirements. Illiterate and functionally illiterate respondents can be reached.
- **Special visual aids and screening devices can be used.**
- **Interviewer can pre-screen respondents to ensure that he/she fits in the population profile.**
- **Allows for computer- assisted interviews where responses can be recorded and stored to reduce error and costs.**

In order to ensure cooperation the researcher adopted the following measure:

- **Kept the interview atmosphere relaxed;** the creation of a good interview environment and an appropriate relationship between and the respondent instilled confidence in the respondents.
- **Explained why the interview was necessary by giving a brief background as to the nature and purpose of the study.**
- **Stressed the value or benefits of the study to the respondents.** This resulted in respondents cooperating throughout the research.
- **Length of the interview;** the interviews were kept short and to the point.
- **Confidentiality:** The respondents were assured that the research was of an academic nature and that it would only be availed to the public after the respondent's endorsement or consent. Respondents were also assured that the identity was not mandatory and that where identity was supplied that this would remain confidential.
- **Lastly the respondents were thanked for their time.**

3.3 Sampling Method

3.3.1 Population

According to Hall (1978) population is defined as a group of individuals or items which have one or more characteristics that are of interest to the researcher. In this study the population comprises of all registered Asset Management companies in Zimbabwe. They are currently 23 registered Asset Management firms in Zimbabwe.

3.3.2 Sample

A sample is a representative of the population. It is a portion of the population from which the researcher gathers the relevant data. The sample in the research included 17 AMC's which represents 74% of the population. The researcher was satisfied that this sample size was efficient, sufficient and unbiased after adopting the following sampling technique:

3.3.2.1 Stratified sampling technique (proportionate)

According to D R Cooper/P S Schindler (2001) stratified random sampling is defined as a process in which the sample is constrained to include elements for each segment of the population. Proportionate allocation uses a sampling fraction in each of the strata that is proportional to that of the total population. The population is divided into strata and the sampling results can be weighted and combined into appropriate population weights. The strata should be mutually exclusive i.e. every element of the population must be assigned to only one stratum. The strata should be collectively exhaustive i.e. no population element must be excluded. With the ideal stratification each stratum is homogeneous

internally and heterogeneous with other strata. Elements are then randomly chosen from within each sub group.

- Population elements.

The researcher collected the names of registered asset management firms from the Reserve Bank of Zimbabwe' information desk. The companies were subdivided between pension and insurance firms in order to construct the strata. The researcher then phoned and spoke to each of the asset managers that had been identified as part of the sample. After de-briefing about the study and addressing ethically related issues, the researcher made appointments for each of them. Interviews were conducted with asset managers from the selected companies using the pre-designed questionnaire.

3.4. Sources of data collected

In the Zimbabwean context, the research established that there is little published information about asset classes offered by AMC's as inflation insulators. This helps to confirm that the researcher's main source of data was primary.

To complement primary data, the researcher also gathered secondary data in the form of both quantitative and qualitative data. Asset managers provided the information on asset class returns from their internal company reports which were useful in the compilation of the historical figures that are pertinent to the objectives of the study. The other main sources of secondary data include the following;

- a) The daily business newspaper-The Business Herald.
- b) Weekly newspapers-The Zimbabwe Independent.
- c) The Zimbabwe Stock Exchange.
- d) The Reserve Bank of Zimbabwe quarterly publications.
- e) Magazines and the weekly Financial Gazette.

3.5 Justification of Methodology

According to Cohen (1989), justification of methodology must be given special attention so that the instruments used measures what is supposed to be measured. Before the questions of the interview were formulated into final drafts an effort was made to establish content validity through thorough examination of the questions. Content validity

refers to the extent to which a given instrument represents the content of the interest. One of the measures taken was to choose two advisers who are experts in risk management and fund management. These two advisers approved the adequacy of the questions as having the content to measure what was supposed to be measured. Ethical considerations were taken as highlighted in 3.7 to ensure that no harm was done to respondents' rights of privacy. Under this background, the researcher is satisfied that the methodology adopted is valid and reliable.

3.6 Conclusion

This chapter has highlighted on the entire methodology adopted in this particular study. The whole research designed was described, the population and sample were defined, sampling techniques were specified and sources of data also indicated. Methodology is an integral part of the research as it is the source of findings presented in the following chapter. The researcher is assured that this methodology adopted is exhaustive and that reliable results are certain

3.7 Ethical Considerations

According to D R Cooper, P S Schindler (2001) research must be designed so that respondents do not suffer from any physical harm, discomfort, pain embarrassment or loss of privacy. To safeguard against these, the researcher followed the following guidelines:

- The researcher explained the study benefits to the respondents.
- The researcher explained the respondents' rights and protections.
- Obtained informed consent-Oral consent was considered sufficient for the study and no respondent was coerced to attend the interview.
- Every effort was made for respondents to feel wanted and comfortable.
- All respondents were de-briefed about the purpose of the study, the hypothesis, goals, including sharing with them the post study results.
- Guaranteeing confidentiality-All respondents were guaranteed confidentiality of their organizations and themselves and that, names would only be published through their written consent.

4 Chapter 4 - Results presentation and Analysis

4.1 Introduction

This chapter intends to lay down all the findings based on pre-determined investigative questions. The results of the research shall also be analyzed simultaneously with results presentation. In general, data collection was a resounding success and the researcher is assured this significantly assisted in coming up with valid and useful results. The findings on the surveys carried out are vital in the analysis of the research problem. Of the 17 companies chosen to be interviewed, all were contacted but 15 were interviewed thus giving the study an 88% response rate. Respondents were significantly cooperative and were willing to assist wherever possible in supplying the relevant data.

4.2 Findings and Analysis

The findings in this study were based on pre-planned questions which were used during the interviews with the fund managers. These questions are shown in Appendix 1. The major areas covered were:

- a) The returns for the various asset classes since 1998-2003, which was the sample period.
- b) The average growth of returns from the different asset classes.
- c) The cumulative returns for the different asset classes using the geometric mean.
- d) Construction of the optimal holdings of asset classes in an efficient well-diversified portfolio.
- e) The role of Real Estate Investments in the Zimbabwean inflationary environment.

The research intended to find out whether the available asset investment vehicles are good inflation insulators. To measure this, the average growth of returns and the cumulative average growth were calculated for each asset class together with inflation and the 91 day TB's and NCD's as benchmarks.

As indicated in Table 4.1 below growth in terms of each asset class is shown. In 2000, there was real growth in all the assets classes with real estate scoring the highest at 149.56%. Since 2001 to December 2003 returns on money market securities were far below inflation levels. Since 2002 to 2003 the general equity returns were lower than inflation. It is also clear that real estate was lower than inflation but this is counteracted by the cumulative real returns in Figure 4.2.

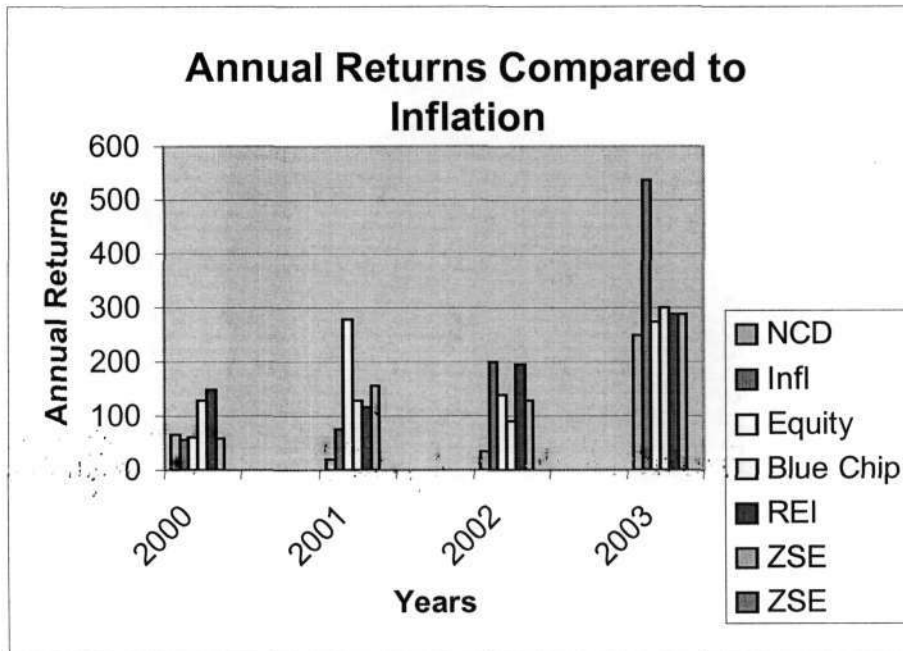
Table 4.1

Fund Performance

Growth for each year%

Period	NCD	Inflation	General Equity	Blue Chip Fund	Real Estate	ZSE
2000	64.98	55.86	61.61	128.4	149.56	58.68
2001	20.00	74.40	279.00	130.12	117.88	155.30
2002	35.00	198.90	138.90	91.14	195.40	128.23
2003	250.00	535.96	272.82	299.1	287.21	287.98
Cumulative	835.44	5,066.98	5,355.35	2,277.84	5,275.71	3487.2

Figure 4.1



4.3 Average growth

This average growth has been analyzed from the year 1998 for the Real Estate, Blue Chip and General Equity funds(see Figure 4.2) as information on these funds was available from this period. The arithmetic average for the 5 years incorporates the percentage year to date returns for each fund since 1998 and averages that performance history.

- The average inflation rate since 1998 is 159.23% and real estate investments have 162.24%. This helps to support the hypothesis that real estate investments provide an ideal solution for hedging against inflation.
- The inclusion of real estate in a balanced portfolio reduces the investor's exposure to the risk associated with inflation in the medium to long term whilst increasing returns and diversification.
- The 91 day NCD return (our proxy for the money market based securities gives an average of 80.95% which is negative when compared to inflation over the sample period.
- The real estate investments have performed a cut above the ZSE industrial index (119.16) which is our proxy for the stock market based funds.

Figure 4.2

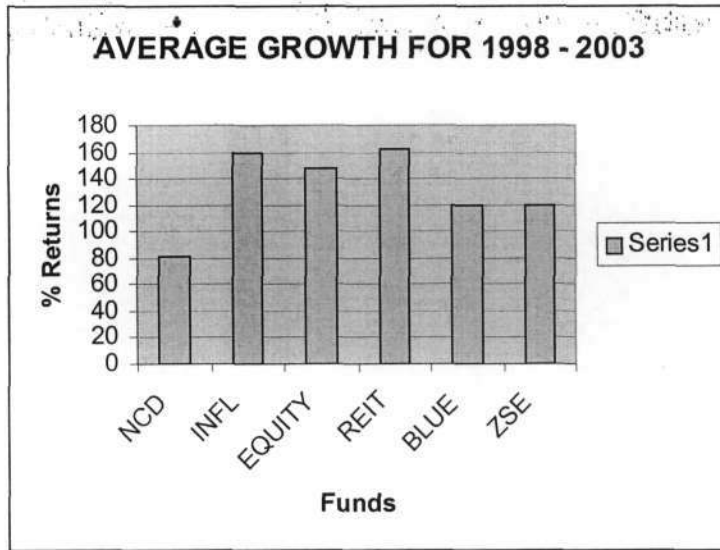


Table 4.2

Fund Performance

Average growth%

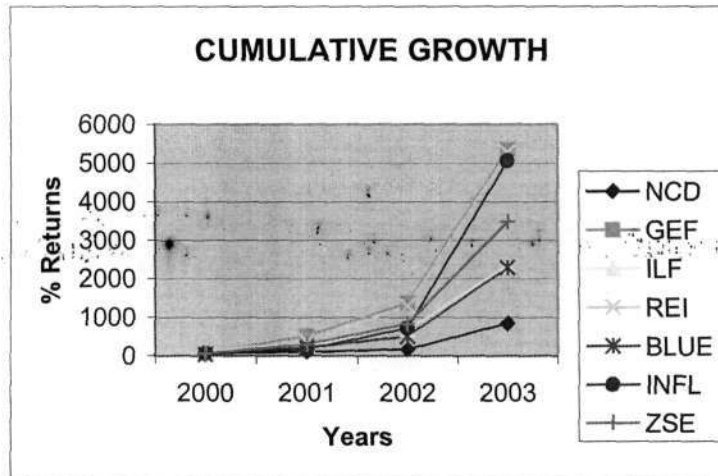
Period	NCD	Inflation	Equity General	Real Estate	Blue Chip	ZSE INDEX
1998	42.00	31.74	10.00	(6.45)	-28	30.1
1999	73.70	58.50	126.00	263.78	92.4	54.64
2000	64.98	55.86	61.61	115.60	128.4	58.68
2001	20.00	74.40	279.00	117.88	130.12	155.3
2002	35.00	198.90	138.90	195.40	91.14	128.23
2003	250.00	535.96	272.82	287.21	299.1	287.98
Average	80.95	159.23	148.06	162.24	118.86	119.16

Table 4.3

Cumulative Growth
Geometric Growth From Year 2000 as a %

YR	NCD CUM	GEF CUM	ILF CUM	REIT CUM	BLUE CUM	INFLATI ON	ZSE INDEX
2000	64.98	61.61	60.20	115.60	36.00	55.86	58.68
2001	97.98	512.50	275.64	369.75	212.96	171.82	305.11
2002	167.27	1363.27	674.98	1287.64	498.20	712.47	824.58
2003	835.44	5355.35	2331.64	5273.08	2287.41	5066.98	3487.20
CUM	835.44	5355.35	2331.64	5275.71	2277.84	5066.98	3487.20

Figure 4.3



The cumulative growth from the year 2000 (see figure 4.3 for all funds available from this period) is calculated using the geometric average method-is growth on each year's return is calculated by taking into account the preceding returns for the time period under consideration- (see formula per attached spreadsheet). According to Kane Bodie and Marcus (2002) the motivation for using the geometric average emanates from the principle of compounding. If dividend proceeds are reinvested, the accumulated value of an investment in the stock will grow by the growth factor. The geometric average has considerable appeal over the arithmetic mean because it represents the constant rate of return that would have been needed to earn in each year to match the actual performance.

- The real estate investment cumulative growth since 2000 is 5273.08% compared to the inflation figure of 5066.98%
- Therefore this means that an investor who invested funds in real estate in the year 2000 would have realized above inflation returns. This reemphasizes the ability of the real asset investments to track and beat inflation.
- The general equity funds have also shown according to the study that they can reap returns that are above inflation.
- The returns in the money market for the period are shown at 835.44 trailing way behind inflation also helping to explain the notion of "low risk low returns".

4.4 Optimal Holding of Real Estate in a Diversified Portfolio

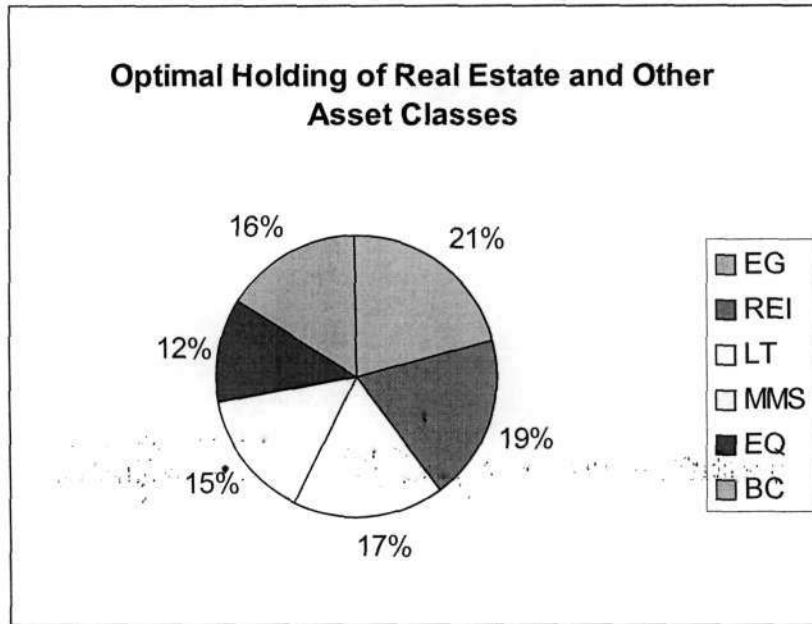
Diversification reduces investment risk.

Table 4.4

AVERAGE OPTIMAL HOLDINGS OF DIFFERENT ASSET CLASSES

Equity General	21%
Real Estate Investment	19%
Long Term Treasury Bills	17%
Money Market Securities	15%
Equity Indexed	12%
Blue Chips	16%
TOTAL	100%

Figure 4.4



Further investigations on the importance of real estate as inflation insulators has shown that asset managers include a significant proportion of real estate in the construction of their efficient portfolios. In overall terms as shown in Figure 4.4 (Pie Chart) a 19% stake represents real estate which is only 2% lower than the highest stake of general equity. The choice by investors to include real assets as 19% of their diversified portfolios indicates how they view its superiority over most of the assets except general equity which seem to be preferred overall to other assets. The deviation being exhibited here by general equity funds can be attributed to the astronomic or inflationary profits that firms made especially in 2003. It could also be appreciated that when inflation sets in strongly some investors become pessimistic in holding illiquid assets due to their short term financial requirements. However as shown above the superiority of real property asset investments can not be ignored since it is being preferred second from general equity funds above all other asset classes.

4.5 Risk and return

The research also sought to establish the risk and return perceptions of the portfolio managers on a 5 year- term horizon by ranking alternative investment vehicles by risk and return. The analysis of the results showed that i.e. 67% of the respondents 10 of the 15 asset managers ranked real estate as perceived to have high returns over the 5 year time horizon. 13% ranked the real estate investments to be in the very high returns category and the remainder of 20% ranked real estate at moderate return. Of significance was the evidence of the results showing no respondents ranking real estate within the very low and the low return categories. The ranking for risk was 20% very low risk, 40% low risk and 40% moderate risk. Both insurers and pension fund respondents ranked real asset investments as having high return and low to moderate risk characteristics. This also dispels the theoretical notion that higher risk implies higher returns. This is however an area that would be recommended for further research to be entirely conclusive.

4.6 Conclusion

From the findings the researcher concluded that AMC's are versatile and highly innovative but are stifled from further product development due to a prohibitive regulatory framework in Zimbabwe. Asset management companies are an integral part of the growth and development of any economy. It also emerged that property investments are the best in an inflationary environment because positive real returns are assured. The analysis of results from the relative risk and return perceptions of asset managers indicate that they view real estate as a safe investment that offers high returns and with low to moderate risk characteristics. This chapter is critical in the paper and the researcher is confident that the findings are valid, relevant and will significantly assist in policy recommendations as shall be discussed in the following chapter.

5 Chapter 5 – Conclusion

5.1 Introduction

This is the final chapter of the paper which summarizes the overall research. It is always necessary to wrap up a thesis with a conclusion and to give recommendations and their implications to the economy.

As already indicated AMC's play an important role in the economy since they enhance the efficient allocation of resources in the financial sector.

The data gathered supports the hypothesis that real state provides a good hedge against inflation. The research has proved that property investments provide a good hedge against inflation. The results of the inflation hedging study do not reject the hypothesis that real estate investments are better insulators against inflation compared to traditional classes. Therefore real estate investments would complement any investment strategy during periods associated with rising inflation.

The results are also consistent with the general perception that bonds do not provide a good hedge against inflation but they vary with the notion that stocks do not provide a good hedge against inflation. Where efficient portfolios were constructed, the real estate holdings had a weighting of 12 and 16% which shows the confidence that the portfolio managers attach on this asset class. It was not possible to illustrate the distinction between equity real estate and real estate investment trusts as the asset managers could only provide aggregated figures. The research study also noted that there has been very little development to include alternative assets in investment portfolios. The investment market is more traditional with real estate investments as the only alternative investments available.

The Zimbabwean investment market has generally disregarded alternative investments. The main reason of the lack of alternative investments is the prohibitive nature of the regulatory framework. The acute shortage of foreign currency and regulations on foreign currency trading has been major setbacks for investing in foreign stocks.

The sample period of 1998-2003 was used as this covers the time when most of the asset classes were employed by the asset management firms. The study would have been

carried out on a longer period of time to improve its confidence were it not of this period constraint.

5.2 Recommendations

The study has established that real estate is a good inflation hedge and it would be strategic for situational investors to include real estate investments in their portfolios. The researcher recommends that real estate investments can be promoted in Zimbabwe for the benefit of the economy as a whole. Any investor who wishes to prosper from diversification in alternative investments should consider real asset investments in times of high inflation. Any investors, be they individual or institutional aim to maximize shareholder wealth and therefore should embrace this recommendation. The empirical results provide a lesson to asset managers to employ portfolio strategies that push for a higher weight of real asset holding in periods of high inflation. The Zimbabwean investment market has a potential to include more alternative investments in diversified portfolios. Investments like Treasury Inflation Index securities can also offer some protection against inflation as their redemption values are adjusted for the CPI. To achieve income and capital growth without significant volatility is the goal of all investors.

It is vital that research continues to follow real assets expected growth and success into the future. This research provides continued rationale for real assets inclusion within diversified portfolios and will allow for its performance tracking.

In order to enhance a bigger size or scale of real estate investments the researcher recommends that the following policies must be implemented:

- a) Fund managers should always include real estate investments in their efficient portfolios in order to cushion their investors from inflation related risks.
- b) It is necessary to educate investors on the advantages of property investments in an inflationary environment. Since the biggest investor concern on property funds is divisibility and illiquidity, fund managers need to devise suitable property equity funds to address particular needs. (Unitized property investments) By buying shares

in a property this reduces the illiquidity fears as shares can be sold to other investors when cash needs arise.

- c) The regulatory framework should facilitate international trading of specific investments such as, international real estate or global common stocks. This will go a long way in enhancing the development of the investment industry in Zimbabwe, which is currently more traditional.
- d) Zimbabwe like South Africa can introduce such products as Treasury Inflation Indexed Bills, which offer protection against inflation.
- e) Fund managers can also benefit from computer based information systems that are designed to analyze investments such as FAMAS Encore. It is used worldwide by more than 32,000 lending professionals and investment analysts, operating in approximately 1000 financial institutions.

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Appendix 1

RESEARCH QUESTIONNAIRE

Dear Respondent

My name is Felix M'tawarira, an MBA student with the University of Kwazulu Natal. I am doing my dissertation as the final fulfillment of the MBA degree. The information gathered will be used only for this research project and will be treated with strict confidence.

Project Topic

An investigation into the strategic investment vehicles that are used to hedge against inflation by certain Asset Management Firms

The following questionnaire is part of my fact gathering technique:

Questions to A M Cs

- 1) When was the company established?
- 2) What investment vehicles does your company offer?
- 3) Can you briefly describe the evolution of different asset classes offered by your company?
- 4) Can you describe what goes into your investment decision- making process and how you choose which assets to invest in?
- 5) How applicable are the various textbook techniques in portfolio analysis in the Zimbabwean case? (These include; diversification, optimal variance approach, top-down analysis and others).
- 6) What basically is your investment philosophy?
- 7) Investors are generally risk-averse, how do you manage risk in your investment decision? How successful is this in quantitative terms?
- 8) What is the general performance of each particular portfolio since its first trading?

- 9) In terms of size, what can you say about the growth of each particular fund? If the size is growing due to more new money being injected, how do you manage the trade off between performance and growth?
- 10) In an inflationary environment, investors are more concerned about real money. In the Zimbabwean case, hyperinflation is prevalent. Do you have particular asset classes meant to hedge against inflation?
- 11) Which asset classes are most preferred by your clients?
- 12) Taking inflation and or 91 TB yield as our benchmark; do you have year-to-year statistical data which shows the performance of each fund?
- 13) What measures do you take to guarantee above inflation returns?
- 14) Do you have statistical data to measure the relative risk for all the asset Classes for the last 5 years?
- 15) Do you have statistical data on the Optimal Holding of the various asset classes within a diversified Portfolio-ie. Bullet Portfolio or Efficient Portfolio?
- 16) Looking ahead, how do you expect your funds to perform in view of the prevailing macro-economic environment with reference to the December 2003 monetary policy statement and the stance the Government and monetary authorities have taken on the A M C's .

Appendix 2

Alternative Investment Vehicles Ranked by Risk and Return by Respondents
Five Year Horizon with inflation hovering around 200% per year

	Very low return	low return	Moderate return	High return	Very High return
A-Estimate of the relative return for each asset class					
Equity funds	1	2	3	4	5
Corporate bonds	1	2	3	4	5
Long term Treasury bills	1	2	3	4	5
Real Estate Investments	1	2	3	4	5
indexed funds	1	2	3	4	5
Derivatives	1	2	3	4	5
money market securities	1	2	3	4	5

B-Estimate of the relative risk for each asset

Equity funds	1	2	3	4	5
Corporate bonds	1	2	3	4	5
Long term Treasury bills	1	2	3	4	5
Real Estate Investments	1	2	3	4	5
indexed funds	1	2	3	4	5
Derivatives	1	2	3	4	5
money market securities	1	2	3	4	5