Analysing higher-value wildlife as an investment alternative

GJ van Wyk

23983833

Dissertation submitted in fulfilment of the requirements for the degree *Magister Commercii* in Management Accounting at the Potchefstroom Campus of the North-West University

Supervisor: Mr FJ Bibbey
Assistant supervisor: Dr PC Cloete

May 2015

It all starts here ™

NORTH-WEST UNIVERSITY ®
YUNIBESITI YA BOKONE-BOPHIRIMA
NOORDWES-UNIVERSITEIT

ACKNOWLEDGEMENTS

It is impossible to submit academic research of this magnitude without the help and support of family and friends to encourage you along the way – albeit in an academic sense, or on a more personal and emotional level. I would first and foremost like to dedicate this research to my grandfather, Martinus Wilhelmus van Wyk (1930 – 2014), a master in his field, who had always been an exceptional example of a man of principle and great ambition. Thank you for being such an exemplary role model. I would also like to extend my gratitude to the following people:

- To my promoters, Dr. Flippie Cloete and Frans Bibbey, thank you for your guidance and patience with my stubbornness and my wild ideas. This study would not have been possible without the teachings and industry knowledge provided by Dr. Cloete. I am eternally grateful for the thoughtfulness and understanding manner in which both promoters have treated me. They are both an inspiration.
- To my parents, Martin and Elsabé van Wyk, for allowing me to pursue this endeavour. Their constant support in furthering my academic foundation speaks of their love, trust and belief in my abilities to take on this challenge in life. They have been a pillar of support throughout my academic career, and without them nothing would have been possible. I admire you both for your examples as entrepreneurs and the wonderful and kind people that you are.
- I would like to thank my grandmothers, Una van Wyk and Baba Liebenberg, for their love and support and weekly phone calls when wanting to get the latest update on my research.
- To my brother and his wife, Martin and Aldi van Wyk, thank you for every Saturday night *braai*, laughs and the much needed distraction when the pressure got too much.
- To my companion and best friend, Elani Willemse, you have been a pillar of support. Without your long nights, patience, proof-reading, love and guidance, this dissertation would not have been possible. You are awesome, and I love you.
- To my friends, Mias van der Walt, Wynand Botes, Jean-Pierre du Plessis and Petri de Beer, thank you for your patience and understanding every time I cancelled and was unable to attend every time I was invited to a gathering. In your own unique ways you are all role models and I thank you.

- I would also like to thank the Department of Accounting at the North-West University Potchefstroom Campus, and more specifically Prof. Surika van Rooyen and Prof. Pieter Buys, for believing in me and trusting in my abilities.
- To Wilgenhof and the University of Stellenbosch, I would not be the man I am today without you.
- To the North-West University, Potchefstroom Campus, you have provided me with the most amazing and wonderful opportunities, allowing me to further my education, expand my career and work for a first rate company.
- Finally, I would like to thank the individuals who participated in my case studies for entrusting me with their personal business information, ultimately enabling me to complete this study in a manner which I am proud of.

ABSTRACT

Keywords and Terminology: Higher-value wildlife, investment, investment alternative, return on investment, risk and return, tangible assets.

Recent developments in the breeding of higher-value wildlife have seen the emergence of an alternative investment opportunity being offered to potential investors. Through this opportunity, investors can enter a lucrative market which has proven to date to be a highly profitable alternative, generating even higher than above average returns. The objective of this study can be summarized as three-fold: to determine whether higher-value wildlife can be considered as an investment alternative, to contextualize higher-value wildlife as an investment alternative and finally to establish guidelines for investment in this new asset class by means of a case study approach and the analysis of the methodology of two ranchers/investment providers offering higher-value wildlife as an investment opportunity.

As this investment initiative continues to develop and new investment opportunities arise, the need for contextualization and analysis of investments in higher-value wildlife, based on sound financial management principles, is becoming more apparent. In order to address this need for contextualization, a literature review is undertaken where the background of higher-value wildlife is discussed. However, contextualization of a new asset class cannot be completed in isolation. The nature of investments is analysed, followed by a discussion of the most commonly used investment options and techniques utilized in investment analysis. However, contextualization of a new asset class based purely on literature, would disregard the practical application that is utilized within the higher-value wildlife investment sector. Therefore an industry relevant context is presented by analysing the practices and methodology employed by two ranchers/investment providers who offer higher-value wildlife as an investment option.

In order to validate investment in higher-value wildlife and factually classify the economic activity as an investment alternative, a set of criteria and characteristics are established. Based on a literature review regarding the nature of investments, the conclusion is made that higher-value wildlife is a valid tangible alternative investment option, adhering to investment principles such as risk and return. Through the analyses of information gathered by means of

two case studies, the theory and criteria is applied and further conclusions are drawn in order to establish guidelines for investment in the higher-value wildlife industry.

This is done by an analysis of the business model and the modus operandi of the case studies. The advantages and inherent disadvantages regarding the manner in which the case studies approach higher-value wildlife investment is highlighted. By incorporating and analysing the information gathered (by means of semi-structured interviews and literature reviews) conclusions are drawn which could provide information and guidelines for potential future investors.

As stated, this research is based on a case study approach, whereby specific industry insights are gained from established high-value wildlife ranchers/investment providers. The investment principles discussed in the literature review are applied to each case study for a comprehensive analysis of investment in higher-value wildlife. This acts as an important aid in the contextualization of higher-value wildlife as a viable investment alternative within the broader investment landscape. Creating context and establishing the validity of a new asset class of investments is of utmost importance. This study aims to address the above and provide guidelines for future investment by analysing higher-value wildlife as an investment alternative.

UITTREKSEL

Sleutelwoorde en Terminologie: Belegging in hoër-waarde-wild, beleggingsalternatief, opbrengs, risiko en opbrengs, tasbare bates.

Onlangse ontwikkelinge in die teel van hoër-waarde-wild het die potensiaal vir ’n alternatiewe beleggingsgeleentheid vir beleggers moontlik gemaak. Beleggers kan deur hierdie geleentheid ’n kompeterende mark binnedring, wat tot dusver ’n hoogs winsgewende beleggingsalternatief bied en ’n bogemiddelde opbrengs kan genereer. Die doel van hierdie studie kan drievoudig opgesom word: om vas te stel of hoër-waarde-wild as ’n beleggingsalternatief beskou kan word, om hoër-waarde-wild as beleggingsalternatief te kontekstualiseer en om deur middel van ’n gevallestudie-benadering en die analise van die metodologie van twee wildbewaarders/beleggingsvoorsieners wat hoër-waarde-wild as ’n beleggingsgeleentheid aanbied, riglyne vir belegging in hierdie nuwe bateklas vas te stel.

Soos hierdie beleggingsinisiatief voortdurend ontwikkel en verdere geleenthede vir beleggings ontstaan, word die noodsaklikheid vir kontekstualisering en analise van beleggings in hoër-waarde-wild wat in konkrete finansiële bestuursbeginsels gegrond is, meer duidlik. ’n Literatuuroorsig waarin die agtergrond van hoër-waarde wild bespreek word, is onderneem om hierdie behoefte aan kontekstualisering aan te spreek. Kontekstualisering van ’n nuwe bateklas kan egter nie in isolasie voltooi word nie. Die aard van die beleggings word geanaliseer, gevolg deur ’n bespreking van die mees algemene beleggingsopsies en tegnieke wat tydens die analise van bates gebruik word. Kontekstualisering van ’n nuwe bateklas kan egter nie slegs op grond van ‘n literatuurstudie geskied nie, omdat die praktiese toepassing wat binne die sektor van hoër-waarde wild gebruik word ook van kardinale belang is. Om hierdie rede word ‘n industrie-relevante konteks voorgelê deur die praktyk en metodologie van die twee wildbewaarders/beleggingsverskaffers van hoër-waarde wild te analiseer.

’n Stel kriteria en eienskappe word vasgestel om belegging in hoër-waarde-wild en die ekonomiese aktiwiteit daaraan verbonde werklik as ’n alternatiewe belegging te erken. Deur die literatuuroorsig word daar tot die gevolgtrekking gekom dat hoër-waarde-wild ’n geldige, tasbare alternatiewe beleggingsopsie is wat aan bepalende beleggingsbeginsels soos risiko en

opbrengs voldoen. Die teorie en kriteria word op twee gevallestudies toegepas en verdere gevolgtrekkings word gemaak om uiteindelik riglyne vir belegging in hoër-waarde-wild vas te stel.

Deur die analise van die besigheidsmodel en modus operandi van die gevallestudies word die voordele en inherente nadale verbonde aan die wyse waarop die gevallestudies hoër-waarde-wild benader onder die loep geneem. Die inligting word verder geïnkorporeer en geanaliseer deur semi-gestruktureerde onderhoude en literatuuroorsigte, waarna daar tot gevolgtrekkings gekom word wat inligting en riglyne aan moontlike toekomstige beleggers kan bied.

Soos genoem, word hierdie navorsing deur middel van `n gevallestudie benadering uitgevoer. Deur dié metode word spesifieke insigte rakende die wildbedryf van gevestigde wildbewaarders/verskaffers van beleggings verkry. Die beleggingsbeginsels wat in die literatuuroorsig verskaf word, word op elke gevallestudie toegpas vir ’n omvattende analise van belegging in Hoër-waarde wild. Dit dien as ’n belangrike hulpmiddel in die kontekstualisering van Hoër-waarde wild as ’n volwaardige alternatiewe belegging binne die breër spektrum van beleggings. Dit is van groot belang om ’n konteks te skep en die geldigheid van hierdie nuwe bate vas te stel. Hierdie studie beoog om die bogenoemde aan te spreek en riglyne vir toekomstige beleggers te bied deur hoër-waarde wild as alternatiewe belegging te bestudeer.

TABLE OF CONTENTS

CHAPTER 1

1.1 Introduction and Background....1
1.1.1 Wildlife Industry....2
1.2 Problem Statement....9
1.3 Objectives....10
1.4 Scope of the Study....11
1.5 Field of Research....11
1.6 Research Methodology....12
1.6.1 Literature Study....12
1.6.2 Empirical Study....12
1.7 Outline of the study....13

CHAPTER 2

2.1 Introduction....15
2.2 Research Design....16
2.3 Research Methodology....16
2.4 Objectives of Empirical Investigation....17
2.5 Research Design and methodology rationale....18
2.5.1 Sample Selection and Design....23
2.5.2 Sampling Technique....24
2.6 Research Method....25
2.6.1 Background....25
2.6.2 Types of Research....26
2.6.3 Strengths of Case Study Research....28
2.6.4 Weakness of Case Study Research....29
2.7 Data Collection techniques....29
2.7.1 Interview Guideline....30
2.7.2 Interviews....30
2.8 Research Ethics....31

2.9 Shortcomings and sources of Error 34
2.10 Conclusion 34

CHAPTER 3

3.1 Introduction 36
3.2 Investment Nature 38
3.2.1 Active versus Passive Investing 38
3.2.1.1 Passive Portfolio Management 38
3.2.1.2 Active Portfolio Management 39
3.2.2 Gambling, Speculation and Investment 40
3.2.2.1 Gambling 40
3.2.2.2 Speculation 41
3.3 Financial Assets versus Real Assets in Investments 42
3.3.1 The Investment Process 43
3.4 Investment Criteria and Characteristics 46
3.5 Investment Theory and Investment Criteria 47
3.6 Investment Alternative Selection 62
3.6.1 Identification of Alternatives 63
3.6.2 Monetary Consequences of Alternatives 63
3.6.3 Nonmonetary Consequences 64
3.6.4 Cash Flow Dispersed in Time 65
3.6.5 Uncertainty in Decision Making 66
3.7 Risk and Return 67
3.7.1 Introduction to Risk and Return 67
3.7.2 Return 68
3.7.3 Risk 70
3.8 Conclusion 76

CHAPTER 4

4.1 Introduction 77
4.2 Asset Allocation 77

4.3 Monetary or Financial Investment Options 79
4.3.1 The Money Market 80
4.3.2 The Capital Market 81
4.3.2.1 The Equity market 83
4.3.2.2 The Bond Market 84
4.3.2.3 The Derivative Market 86
4.3.3 Collective Investments or Unit Trusts 89
4.3.3.1 Types of Unit trusts 90
4.3.3.2 Advantages of Unit Trusts 90
4.3.3.3 Disadvantages of Unit Trusts 91
4.4 Real or Tangible Investment Options 92
4.4.1 Collectables 93
4.4.2 High-value Wildlife 95
4.5 Investment Appraisal and Analysis Techniques 95
4.5.1 Introduction 95
4.5.2 Investment Appraisal Methods 96
4.5.3 Return on Investment (ROI) 97
4.5.3 Payback Period 99
4.5.4 Net Present Value (NPV) 101
4.5.4 Accounting Rate of Return (ARR) 102
4.5.6 Internal rate of return 103
4.6 Conclusion 104
5. Empirical Research Findings 106

CHAPTER 5

5.1 Introduction 106
5.2 Case Studies 107
5.2.1 Case Study A: Association of ranchers 107
5.2.1.1 Background information 107
5.2.1.2 Business Model Analysis 109
5.2.2 Case Study B: Individual rancher 111
5.2.2.1 Background information 111

5.2.2.2 Business Model Analysis 111
5.2.5 Background: an Analysis and interpretation of Case Study A and B 113
5.2.5.1 Advantages/Strengths in Case Study A's approach 114
5.2.5.2 Disadvantages/Weaknesses of Case study A's approach 115
5.2.5.3 Advantages/Strengths of Case Study B's Approach 116
5.2.5.4 Disadvantages/Weaknesses of Case Study B's Approach 116
5.3 High-value Wildlife investment Analysis and Methodology 117
5.3.1 Case Study A: High-Value Wildlife Investment Analysis and Methodology 119
5.3.1.1 Cash Flow and Costs: Association of Ranchers 121
5.3.1.2 Risk Management: Association of Ranchers 123
5.3.2 Case Study B: High-Value Wildlife Investment Analyse and Methodology 125
5.3.2.1 Cash Flows and Costs: Case Study B 129
5.3.2.2 Case Study B: Risk Management 130
5.4 An Analysis and Interpretation of High-value Wildlife Methodology 131
5.5 Theory Application 133
5.5.1 Income 133
5.5.2 Growth 134
5.5.3 Flexibility and Liquidity 135
5.5.4 Ease of Management 135
5.5.5 Knowledge/management requirements 136
5.5.6 Risk and Return 137
5.5.7 Diversification 139
5.5.8 Amount, Term of the Investment and Timing 140
5.5.9 Safety of Capital 142
5.5.10 Transaction Costs 142
5.5.11 Control 142
5.6 Conclusion 143

CHAPTER 6

6.1 Introduction 144
6.2 Summary of Chapters 145
6.3 Research Findings 148

6.3.1 Objective 1: Contextualizing High-value Wildlife as an Investment Alternative 149
6.3.2 Objective 2: Establishing the Validity of High-value Wildlife as an Investment Alternative 150
6.3.3 Objective 3: Guidelines for Investing in High-value Wildlife.....153
6.4 Contribution 156
6.5 Limitations of the Study.....157
6.6 Recommendation for Further Research 158
6.7 Conclusion 158

List of Figures

Figure 1.2 The investment process……...……43
Table 3.5.9.1 Average annual return for the most common asset classe……..…...54
Table 3.6.4.1 Cash Flow Dispersion……..…..65
Table 5.2.1.1 Investor price points for high-value wildlife……..…..... 108

CHAPTER 1: AN INTRODUCTION AND BACKGROUND

1.1 INTRODUCTION AND BACKGROUND

New alternative investments are constantly being expanded and developed as investors seek new ways to diversify their portfolio (Erasmus *et al.*, 2003:140). Investors tend to include non-financial and tangible assets in their portfolio, because these assets offer negative correlation to existing traditional financial investment in respects to price movement and return (Ardehali *et al.*, 2005:491-519). Alternative investment products allow investors to invest in their passions whilst effectively diversifying their portfolio (Butcher, 2007:38). Recent changes such as the 2008 recession, the London Interbank Offered Rate (LIBOR) manipulation in 2012 and higher transactions fees have dramatically changed the investment landscape and retirement planning for individuals (Fidelity, 2012). These changes together with increasing inflation and uncertainty have highlighted the need for greater return, risk mitigation and improved portfolio diversification (Fidelity, 2012). Investors today are progressively being faced with diminished returns, due in large to ever increasing inflation market volatility leaving few remedies or options for investors. The importance of diversification within an investor's portfolio becomes more apparent as uncertainty increases. The reason for this is that an alternative investment often offers the added benefit of a negative return correlation, and in doing so, provides a remedy within potential uncertain financial situations.

The 21st century saw the dawn of a new era in wildlife ranching with a shift from agricultural products to management intensive breeding practices funded by ranch owners and outside/foreign capital from investors. The use of foreign or external capital from outside the wildlife industry to fund breeding resulted in wildlife functionally being utilized as an alternative or substitute to traditional investments opinions. Over the last 10 years higher-value wildlife breeding has shown capital growth and returns fluctuating well above traditional investment options (Bezuidenhout, 2013). As high-value wildlife breeding and ranching continues to grow and develop as an industry, investors are granted the opportunity to grow capital and generate income. It is important to note that very little research has been done on

this specific topic to date. This new and developing phenomenon of investment in breeding of high-value wildlife within the traditional ranching industry, highlights the need for analysis and understanding of the investment options offered within this industry as a whole. In order to determine whether high-value wildlife breeding can be considered an appropriate alternative to traditional investments, the different investment options within the financial industry need to be analysed and understood. The validity of high-value wildlife as an alternative investment option can only be determined by analysing and weighing these traditional investment options against investments in high-value wildlife. This is done by contextualizing the economic activity/initiative through research and analysis of the best practice methods utilized by the relevant parties within the industry.

For any economic activity to be considered an investment, best practice principles, financial management techniques and analysis need to be applied to conclude whether such an economic activity is a viable investment option, and consequently an alternative to more established traditional investments options. High-value wildlife breeding has *seldom* been studied in the field of wildlife management and agricultural economics. The industry, the investments and the factors influencing the investments offered have *never before been studied academically, nor analysed* from a financial management or an investment perspective.

1.1.1 Wildlife Industry

In the beginning of the 20th century (late 1800 until 1950), wildlife had no real economic value and was only seen as part of nature (NAMC, 2006). Common wisdom of the time dictated that there could be no coexistence between domestic livestock and wildlife, the reasoning being that the animals competed for the same resources, such as a defined farm and limited grazing areas (Cloete, 2012:1). This commonly held conviction included the belief that disease would be transferable among domestic livestock and wildlife, thus threatening the economic feasibility of the business activity. The zeitgeist dictated that in order for modern agricultural farming to prosper, the eradication of wildlife was a necessity. The end result was that certain scarce species of wildlife were almost eradicated, leaving only nineteen bontebuck, thirty white rhinoceros and two thousand blesbuck (Dry, 2012).

Government intervention in 1894 resulted in the formation of statutory game reserves. These reserves were mostly not suitable for agricultural use and the areas were susceptible to the tsetse fly and malaria. In 1926 various national parks were established as a result. However, 1960 saw the dawn of real investment into wildlife ranching (as witnessed in a more contemporary context). This era, known as the Conservation Revolution, saw the establishment of nature conservation departments mandated to manage various wildlife conservancies. These conservancies lead the way to increased growth in tourism and boosted the economy by the influx of tourists and foreign capital. In draught years springbucks were seen to be more resilient against the lack of grazing compared to domestic livestock. The industry started to see the potential of game meat, a development which could augment the protein supply base in South Africa (Cloete, 2012:1).

In the later part of the 20th century, development in the wildlife industry increased substantially. This era is commonly referred to as the modern game ranching era. Conditional ownership rights were granted by the South African Government and this helped to stimulate a tide of farmers in converting from traditional livestock to wildlife ranching. This conversion stimulated the demand for what is known as plains wildlife and resulted in tremendous growth and further development in the industry.

The start of the 21st century saw a transition from wildlife farming to wildlife ranching. Previously large open unfenced areas where plain or common wildlife were left to graze, developed into modern fenced areas with increased focus on breeding of wildlife. The modernization, fuelled by higher prices for rare species, resulted in smaller fenced encampments with more intensive management practices in order to breed higher-value species (Cloete, 2012:3).

The wildlife industry's economic performance; according to Bothma and Cloete (2013:1), can be divided into three primary phases dating from 1991 to 2013. The first phase from 1991 until 2000 is regarded as the 'wildlife ranching establishment phase'. This phase saw prosperity on the back of economic and ecological advantages that plains wildlife offered on large unfenced areas, these ranches often border to land for domestic livestock production. The second phase saw established game ranchers turning towards producing rare or higher-value wildlife. The third and current phase is a phase that is characterized by high financial returns from various

high-value wildlife and exotic-colour varieties of wildlife with exceptional morphological characteristics.

The wildlife ranching industry encompasses 13% of South Africa's total productive land. This can be expanded to 20% when taking national parks into account (Bothma, 2005:34). The annual growth rate of the industry has been established at 5.6% due to the economic and ecological advantages within wildlife production (Ebedes *et al.*, 2002:78). These advantages have resulted in a steady increase in wildlife in South Africa. The initial stimulus in the wildlife industry can be attributed to landowners' desire to have a 'retreat' for the enjoyment in their personal capacity (Bothma and Cloete, 2013:2). This has drastically changed and now encompasses conservation for profit ranching which has contributed to the sustainability of wildlife production.

Since inception, the growth of the wildlife ranching industry has annually increased between 5–20% (Dry, 2012). Dry (2012) states that the number of commercial wildlife ranches currently stands at approximately ten thousand ranchers. Three thousand of these ranches comprise of mixed wildlife and domestic livestock ranches, and the resulting seven thousand ranches are attributed to pure wildlife ranching. Despite constant growth in the industry the number of commercial farmers in the wider agricultural sector has decreased from 45,000 in 1999 to 37,000 in 2012 (Dry, 2012). Wildlife ranching has become a multi-billion rand industry in the last decade, currently ranking as the sixth-biggest industry in the agricultural sector (Steyn, 2012).

According to Dry (2010), the wildlife sector has generated an annual estimate revenue of R7.7 billion in 2009. Furthermore Dry (2010) stated that the R7.7 billion approximately contributed 9.8% to South African Agricultural Gross Domestic Product for 2009. Real farm/ranch income has seen a decrease over the same period by 5.3% due to environmental factors, but according to ABSA's wildlife auction results, values have increased dramatically, generating an income of under R100 million in 2006, R200 million in 2008 and 2010, and an estimated R315 million in 2012 (Dry, 2012). These auction results represent formal auctions held at different times of the year, usually on game ranches. These auctions are meticulously documented and results are readily available at professional bodies and associations such as Southern Africa Wildlife Management Association (SAWMA) and Wildlife Ranching South Africa (WRSA).

Trading of wildlife also occurs in an informal manner. These informal trading agreements between ranchers within the industry have not been studied and information is not readily available. Although it is evident that fluctuation patterns are prevalent in informal (rancher-to-rancher) trading within the industry, prices do adhere to auction or market prices (Dry, 2010).

As stated, there is currently an estimate of 10,000 active commercial game ranches, and these areas span approximately 20,5 million hectares. Dry (2012) estimates that an approximate headcount of 16 million wildlife animals are owned for commercial use.

Du Toit (2007:32) stated that the industry comprises of R4.6 billion in revenue without taking wildlife tourism into account. The R4.6 billion can be attributed the following sectors in the wildlife industry: R3.3 billion for recreational hunting (66%); R750 million from translocation and capture of wildlife (16%); R520 million from trophy hunting (11%); R200 million from taxidermy (4%); R42 million from meat production (1%) and live wildlife sales represented (2%) at R96 million (Du Toit, 2007:34).

Wildlife ranching can be divided into two basic categories.

Common or plains game

Common plain species are commonly found and hunted, each with variable prices and a well-established trophy market, e.g. kudu, impala, blesbuck, red hartebeest, gemsbuck etc. (Anon, 2012). There are also higher-valued common or plains game species, these species are rarer around Southern Africa and therefore also receive higher prices. Although these animals are included in what is known as high-value wildlife, they also have the added advantage of having an established trophy market e.g. Livingstone eland, roan, tsessebe, bontebuck, nyala and letchewe. Average return on these common plain species varies between 4–5 % (Steyn, 2012). In the past the high-value wildlife species have far exceeded the value and price growth of their common species counter parts, due in large to scarcity.

Higher-value and colour or morphological variants

High-value colour variant species such as black impala occur due to rare genetic mutations in hide colour of common plain species. These species are considered extremely rare because of their unique genetics and they therefore receive much higher than traditional prices at auction. However, the colour variant species are associated with dramatic price fluctuations and large capital requirements. In the most part the price tendency in the market has been upwards for the past few years. The price growth percentage between 2010 and 2012 are estimated at 71% for white blesbok, 446% for yellow blesbok, 499% for golden gemsbok, 130% for black back impala, 49% for black impala, 80% for black springbuck, 48% for copper springbuck, 19% for white springbuck and golden blue wildebeest at 11%. White kudu prices plummeted by 64% (Bezuidenhout, 2013).

The price growth above was calculated over a two year period, and clearly indicates the potential profitability of high-value wildlife as an investment, especially considering that animals have the ability to multiply. At a wildlife auction which was held on 14 April 2012 in Swartruggens (North-West Province) a Cape African buffalo cow named Tanzania and her calf were sold for R20 million, beating the previous record of R18 million (Christie, 2012). According to ABSA (2012:1) prices for buffalo bulls showed significant increases as well. In 2010 a buffalo bull was estimated at R9 million whereas the 2005 estimate was R165,000 (Christie, 2012). Prices for a sable antelope bull at the same auction reached R3 million and black-face impala, a rare colour variant, fetched R55,000. Records of 2005 indicated that the prices for these two species were at R75,000 and R160,000 respectively (ABSA, 2012:12). The auction prices are heavily influenced by qualitative factors such as aesthetics, paternity, market trends and the amount of historical data available on the animals. Chardonnet (2002:15) argues that many of these critical factors cannot be quantified and so make evaluating or analysing the value of the wildlife difficult. The above price trends and indication of growth clearly underscore and justify the need for a study that can contextualize high-value wildlife breeding in terms of investment potential and whilst also providing clear guidelines for investors wishing to enter the market.

However, there are concerns among nature conservation experts that the breeding of colour variants species is not a sustainable wildlife practice, this when taking into consideration that

these animals are morphological or genetic mutation (Bothma and Cloete; 2013:3). Many breeders disagree, stating that exotic-colour variants are of no concern since they are a natural part of evolution. The wildlife breeders argue that these animals increase the biodiversity and they have a right to reap the profits due to their demand and high economic returns. Colour variants species have become highly sought after and profitable for ranchers. Experts argue, however, that these animals do not contribute to conservation or the long-term survival of their species (Olivier, 2013).

According to Bothma and Cloete (2013:4) the high financial returns seen in the industry has been influenced by amongst other: the developments in terms of breeding practices, translocation techniques, improved levels of knowledge, capturing techniques, transportation, information flow, auction systems and better leadership. These factors have clearly contributed to new confidence in the wildlife sector as an investment designation.

The barriers of entry for investing in high-value wildlife have traditionally been very high and unattainable to the masses, due to high capital requirements of purchasing the ranch, establishing the needed infrastructure and purchasing of the initial herd. Skill, knowledge and leadership is also a barrier considering that the ranching industry is hallmarked by the lack of academic institutions catering and educating by means of industry specific skills. Effective ranching knowledge has traditionally been transferred mostly by means of working or growing up on a ranch, making the skill set and knowledge scarce.

The high return found in breeding of high-value wildlife by ranchers has boosted the overall confidence of the wildlife industry to such degree that new investors are flocking to the industry with the hope of sharing in the profits (Bothma and Cloete, 2013:6). Recent developments in the wildlife industry have seen ranchers think innovatively by creating investment products specifically tailored to bridge the infrastructure requirements traditionally needed by investors in order to enter the market.

Investors, with the help of the rancher, purchase the high-value wildlife at auction, where after the investor agrees that the rancher will care for the animal for a defined contractually agreed upon period. The rancher in return provides a ranch, infrastructure and knowledge to the investor in return for the half of the offspring over a contractually defined period of time.

According to Kruger (2011:2), ranchers breed intensively with various high-value wildlife species in enclosed camps. Intensive breeding practices and investment opportunities exist for all types of high-value wildlife species and colour/morphological variant species. These high-value wildlife species can however be grouped in higher and lower investment options. Species such as buffalo, sable, roan, golden blue wildebeest and black impala typically fall within the higher bracket (due to the average prices exceeding R300,000 per animal) and animals such as tessebe, nyala, letchwe etc., fall within the lower capital or investment requirement bracket.

As part of the contract/agreement the ranchers (whereby the investor invests in high-value wildlife) agree to cover all the operational and day-to-day costs that the animals might entail for the defined period. This includes all translocation, feed, water, supplements or veterinarian care costs that the animals might incur.

In some cases animals are kept in electrified fenced encampments and are protected by specialized electronic chips and GPS tracking units. The costs thereof are also covered by the rancher. Some ranchers also supply insurance or provide investors with a guarantee on the life of the animal whilst in their care, at no additional cost to the investor.

The investor consequently supplies the capital needed to buy one or more females at auction. The purchased animals are then paired with one of the rancher's male animals, where after a breeding pair or herd is established. As stated the parties agree to share the offspring of the breeding herd on equal basis after the defined period of time has lapsed; in many cases the period is defined as five years.

Investors have the option to either liquidate the investment by means of public auction or otherwise as in the best interest of the investor after the lapsed mandatory period. Trading commissions are deducted from the sum of the animals sold and the remaining amount is divided (Kruger & Lubbe, 2011:2).

According to Kruger (2011) the investing value lies in the exponential growth and return that breeding inherently offers investors. As new born animals reach sexual maturity they in turn are able to multiply, this coupled with general upwards price movement over the last few years

for high-value wildlife will (as investors and ranchers have experienced) result in phenomenal growth and returns that outpaces traditional investments. Herein lies the investment opportunity for investors. Wildlife breeding cannot realistically be seen as a traditional investment due to its new nature. Therefore by definition it is rather considered an alternative investment.

Traditional investments entail commonly traded securities with ample information, usually in the form of shares or fixed income securities (UTIMCO, 2006). Investment in equity shares, bonds, money market, unit trusts and gold are all considered traditional in nature due to characteristics such as liquidity, ample available information, regulatory legislation and transparency. Non-financial or alternative investments have traditionally not been the most lucrative of investments, but they offer the possibility of risk reduction through negative correlation to traditional investment options. In such a case tangible assets is not an alternative to traditional investments, but they can be complementary. Whilst there are unlimited options in alternative investments, most of these entail advantages that overlap traditional investments such as capital growth and factors that do not for example have aesthetically pleasing a characteristics (Erasmus et al., 2003:139). Characteristics of alternative investments vary in such a degree that it is often difficult to place a monetary value to an inherently unique characteristic such as the beauty of art or the hide colour variation of Oryx antelope.

1.2 PROBLEM STATEMENT

Traditionally the wildlife sector comprises of hunting, conservancy and tourism based industries. However recent changes have seen the founding of a new avenue that encompasses an investment opportunity within high-value wildlife breeding. Developments in the wildlife sectors, such as investment opportunities offered to investors, coupled with intensive breeding practices, have created new market dynamics within this sector. New investors' capital is being utilized in order to stimulate breeding of high-value wildlife species. To date this opportunity has developed as an alternative to traditional investments.

This study aims to establish the validity of high-value wildlife breeding as an investment. The investment options and developing high-value wildlife sector is an uncertain grey area within the larger investment industry. The lack of research in the field of investment pertaining to

investments in high-value wildlife, as well as the high returns received by ranchers and investors highlight the need for academia to contextualize the industry together with the options available to investors in order to further expand the body of knowledge. As more investors consider and invest in this new developing economic activity/initiative, effective and appropriate guidelines need to be developed that offer a means of analysing and comprehending the many factors that govern the high-value wildlife investment landscape. This study aims to address this need.

1.3 OBJECTIVES

The three primary objectives of this study include the following:

1.3.1 Analysing and contextualizing the developing high-value wildlife investment landscape by researching current trends, best practice analysis methods and determining to what extent investment and financial management principles are taken into consideration.

1.3.2 Determining whether an economic endeavour by investors in high-value wildlife can be considered an alternative investment, by analysing such an economic endeavour against financial and investment principles, criteria and characteristics that established investments adhere to.

1.3.3 Developing clear appropriate investment guidelines that are based on sound financial management principles tailored for investors who wish to enter the high-value wildlife investment landscape.

In order to reach the above stated objectives, the following needs to be achieved:

i. A literature review on the nature of investments in order to establish a means to gauge high-value wildlife's validity as an investment opportunity;
ii. Present an overview of the high-value wildlife industry in order to create context, by means of cases study analysis;
iii. Present an overview of the study area;

iv. Derive guidelines for investors who wish to invest in high-value wildlife as an investment alternative through the analysis of the information obtained from the case studies and literature.

1.4 SCOPE OF THE STUDY

The study will focus on analysing high-value wildlife breeding's validity as an investment alternative and contextualizing the industry it forms part of. By analysing the qualitative and quantitative factors that govern investment in high-value wildlife this research aims to ultimately provide clear investment guidelines for investors. In doing so all factors and variables influencing such an investment needs to be analysed and researched, including but not limited to; specific risk factors, risk mitigation techniques, cash flows, cost appropriation, analysis methods and basic investment related high-value wildlife breeding dynamics. However, as this study aims to create understanding and comprehension for investors in high-value wildlife as an investment alternative, factors such as detailed breeding dynamics, quantitative risk modelling techniques and the effects of taxation will not be included. The reseach predominatly pertains to local South African investors who wish to invest in high-value-wildlife "estate" and not nessesarily investors whom partake in active ranching. This will therefore be the main focus of this case study. However the principles and over arching research is also applicable to international investors and ranchers.[1]

1.5 FIELD OF RESEARCH

The focus of this study will be on the South African wildlife industry; which is primarily located in the North West, Limpopo, Mpumalanga, Eastern and Northern Cape provinces.

[1] The scope of this research is specifically limited to align with the research objectives as discussed, for more information please see chapter 6 pertaining to the "Limitations of the study"and "Recommendation for further study"

1.6 RESEARCH METHODOLOGY

To achieve the above mentioned objectives, a theoretical study of literature and an empirical study are vital in determining the feasibility of high-value wildlife as an alternative investment. The subsections below act as a summary of the methodology detailed in chapter two of this study. Chapter two includes a complete discussion regarding the rationale for the research design and methodology employed.

1.6.1 Literature Study

Chapter three and four of this study relates to a literature and theoretical overview regarding the investment landscape in which high-value wildlife will be adherent upon assuming its validity as an investment alternative. Chapter three details the nature of investments as a whole and includes subsections specifically relating to investment criteria or characteristics whereby established investments are analysed. Chapter four discusses traditional or other investment options available to investors and current best practice analysis methods employed within the investment industry.

The literature study is compiled in accordance with best practice principles whereby academic accredited sources are used by means of databases searches of key concepts associated with this study. These sources include the databases JSTOR, EBSCOHost, EMERALD and Google Scholar. Subject related journal and magazine articles will be used in accordance to academic books, newspaper articles and the internet. A NEXUS search was launched to ensure that the title and the associated theme of this study have not previously been used in academic research.

The list of databases is by no means a conclusive list but will provide the mainstay of the literature used in this study

1.6.2 Empirical Study

Primary information contextualizing the high-value wildlife investment industry, to establish its validity as an investment alternative and provide investment guidelines for investors, was gathered by means of a case studies approach. Information for the case studies was gathered

by making use of semi-structured interviews and electronically recording the interviews. The interview guidelines utilized are included in this text as addendum A.

1.7 OUTLINE OF THE STUDY

Chapter 1: An Introduction and Background.

This chapter focuses on providing background information as well as an overview of the development of the ranching industry to where high-value wildlife breeding has changed to include high-value wildlife as an investment.

Chapter 2: Research Methodology.

The rationale for the research methodology and design of this study is discussed on hand of a literature review of applicable research methodology. This chapter acts as a justification for the cases study method employed in chapter five.

Chapter 3: Investment Nature.

Before one can conclude whether an economic expenditure in high-value wildlife is an investment, a theoretical analysis and literature review is needed in order to create a framework of knowledge by which such activity can be compared with. This chapter aims to fulfil this need.

Chapter 4: Investment Options and Analysis.

Chapter four contains a literature review regarding the various other investment options available to investors. This acts as a means to contextualize the high-value wildlife industry as an investment alternative among other traditional investments available to investors. The chapter furthermore includes a discussion of various analysis methods for investment with the aim of identifying an appropriate analysis method for high-value wildlife.

Chapter 5: Empirical Study and Recommendations.

Chapter five creates context for the investment of high-value wildlife by analysing two investment companies/ranchers as case studies that offer investment opportunities to investors. This acts as a means to contextualizes the high-value wildlife industry as a whole,

in order to draw conclusions and make recommendations based on the research objectives detailed in chapter one.

Chapter 6: Summary, Contributions and Conclusions.

Chapter six summarizes the contents and conclusions of the study. The chapter specifically addresses how the three primary research objectives were met by means of the information produced and researched in the previous chapter.

CHAPTER 2: RESEARCH DESIGN AND METHODOLOGY

2.1 INTRODUCTION

The principle of embracing science in research is of tantamount importance in order to contribute to any body of knowledge (Neuman, 2012:5). Smith (2011:1) states that in accounting and more specifically management accounting research, the main concern is to (1) solve problems, (2) investigate relationships and (3) build the body of knowledge. The focus of this chapter is to provide comprehension and insights regarding the methodology and research design utilized within this study. This chapter will aim to indicate the motivation relating to the choice of the selected design structure and the rational for each method used. Various different research designs will be used to address the research questions as set out in chapter one.

The research methodology utilized in this study is based on a case study approach with information gathered from interviews with ranchers and experts within the wildlife industry. The case study methodology will be discussed in detail in this chapter, and specifically how and in what manner case studies differ from other social sciences research methodologies. Various methodologies will be discussed as part of the rationale for the selection of this specific case study approach. It is worth mentioning that, as part of the analysis of the case study methodology, various types of research encapsulated in this field will also be discussed, followed by a discussion of data collection and analysis techniques utilized to extract information. The final part of the chapter will touch on the ethical implications whilst gathering information.

2.2 RESEARCH DESIGN

Mouton (2012:55) defines research design as the researcher's plan of action or blueprint to execute the study the researcher intends to undertake and ultimately unravel the research question stated in their research proposal (Blumberg *et al.*, 2011:69; Cooper & Schindler, 2011:140).

The research design of a study is primarily aimed at addressing the research objectives as stated in chapter one. A link or bridge is needed between the research questions indicated by the researcher and the actual execution or implementation of the research. Research design is that bridge as it serves as a strategic framework stipulating what actions and plans are to be used in order to achieve one's research goals (Terre Blanche & Durrheim, 2006:34).

From the above mentioned definitions of research design it can be concluded that research design is the blueprint or map whereby researchers should "travel" and come to grips with the set out objectives. These objectives can be seen as the landmarks along way (Middelberg, 2011:108). Furthermore, choosing the appropriate research design is critical to the success of the study in order to ultimately answer the research question.

2.3 RESEARCH METHODOLOGY

Mouton (2012:55) states that research methodology refers to the techniques, methods and actions the researcher utilizes to appropriately implement the research design. Henning *et al.*, (2004:36) continues to state that research methodology comprises of multiple coherent techniques and methods that complement each other, in order to derive data and enable the researcher to make appropriate findings.

Babbie & Mouton (2001:75) defines research methodology as various types of processes and research tools utilized by researchers to obtain answers appropriate to the defined research question to ultimately achieve the pre-set objectives (Middelberg, 2011:109). Leedy & Ormond (2013:12) give a slightly different definition to the above by simply stating that research methodology refers to a general approach followed by researchers while conducting research.

Mouton (2012:56) summarises the intrinsic differences among research design and methodologies as follows:

Research Design	**Research Methodology**
• End product focused, relating to the kind of study planned and the results wanted.	• Primary focus is on techniques, methods (tools) and processes utilized to reach objectives.
• Research question and research problem is the point of departure in the formulation.	• Data sampling and collection (specific task) are the point of departure towards the formulation.
• Focuses on the logic behind the research, determining the necessary evidence required to appropriately address the stated research question.	• Non-linear or individual steps are focused upon within the research process. Relating to the most unbiased or objective procedures that needs to be employed by the researchers.

As underlined by the above, determining the appropriate research design and methodology for a study is crucial to answering the research question. Analysing high-value wildlife as an investment alternative is a complex and diverse topic. Therefore the following subsections will discuss the objectives set by the empirical study and finally an in-depth discussion relating to the rational behind the chosen methodology and research design.

2.4 OBJECTIVES OF EMPIRICAL INVESTIGATION

The empirical objectives (discussed in chapter one) of this research can be further elaborated as the following:

- Analysing the validity of high-value wildlife as an investment by means of investment criteria set out in chapter three.
- Contextualizing the high-value wildlife industry by determining best practice principles utilized by high-value wildlife investment companies in order to analyse investments, profitability and cost appropriation;

- Determining guidelines for an appropriate investment analysis method relating to high-value wildlife, based on existing financial management principles.
- Integrating current analysis methodology applied by experts and high-value wildlife investment orientated companies with existing financial management.
- Determining the economic investment related factors that are affecting investors in high-value wildlife.
- Analysis of risk factors and risk mitigation techniques relating to investing in high-value wildlife.

2.5 RESEARCH DESIGN AND METHODOLOGY RATIONALE

Preliminary research and interviews indicated that the subject of analysis relating to investment has seldom, if ever, been approached academically. The primary goal of this research is to develop guidelines for appropriate, rational, best-practice methodology for investment in high-value wildlife. This specifically relates to investment appraisal techniques and qualitative factors that investors should consider before future investments. The need for analysis has not always been deemed necessary due to the significant growth in prices and the huge profit margins achieved by investors. If the industry adheres to the economic principle of rebalancing, however the need for appropriate analysis mechanisms will in the future be crucial. This will cause profit margins to flatten out, since movement cannot permanently be upwards.

This research can primarily be described as a hybrid methodological study that incorporates qualitative (naturalistic) research, ethnographic case study principles and evaluative research. Mouton (2012:173) defines methodological studies as being aimed at developing new methods. This is particularly appropriate to this study because research relating to the investment of high-value wildlife has never been academically published beforehand. Therefore this research could potentially develop a new adapted methodology which could be utilized in future research on this topic. The naturalistic or qualitative aspect of this study focuses on implementation of such a model and not the quantifiable outcomes. This is due to intrinsic variation among investors such as risk tolerance (for the purpose of discounting) and taxation (Mouton, 2012:161).

Whilst the research aims to ascertain guidelines for an analysis model that can holistically encapsulate investment in high-value wildlife, this cannot be concluded in isolation. The case study approach or ethnographic research aspect of this study brings perspective and context to high-value wildlife investment within the traditional analysis methodology employed by investment companies. Professional investment companies make use of more complex and research based analytical methods than the "average Joe" investor. Based on this statement, the assumption can be made that investment companies in high-value wildlife will employ more sophisticated analysis models than in comparison to more traditional ranchers (Mouton, 2012:149).

Throughout the study various methodologies and designs were considered in order to appropriately analyse higher-value wildlife as an investment alternative. The hybrid nature of the methodology relating to this study (case study based on semi-structured interviews) was specifically chosen due to the below listed constraints and industry factors that were identified through conversations and discussion with the Wildlife Ranching South Africa (WRSA) organization and independent experts:

- ***The subject of the research*:** wildlife research within South Africa has extensively focused on the sustainability and agricultural aspects relating to the field. High-value wildlife is considered a developing sector within the industry, with limited published research. High-value wildlife and colour variants status have only in recent years reached its current popularity, due in large to higher prices and the limited formation of investment companies specializing in high-value wildlife. The topic of high-value wildlife as an investment relating to the field of financial management, specifically investment, is seldom if ever academically been researched. At the time of this research, no academic material could be found that discusses high-value wildlife as an investment alternative.

- ***Lack of reliable data*:** working with the largest professional association within the industry WRSA it became apparent that even this association had almost no data that specifically related to investments in higher-value wildlife. WRSA was able to provide information such as name, surname, ranch name, company's trading name and in 2%

of the cases what wildlife was ranched with by its members. There was no financial information or specifics relating to high-value wildlife available.

- ***Lack of knowledge and expertise***: in preliminary discussions with high-value wildlife ranchers most of the rancher were legacy ranchers or farmers with little or no financial training or background. None of the preliminary discussions yielded anything related to investment analysis or financial management principles employed by the ranchers. However a high level of understanding of financial management (investment appraisal techniques) from experts, specifically agricultural economists with interests in wildlife was noted.

- ***Secrecy and scepticism within industry***: considerable resistance was experienced in the gathering of information, specifically regarding the type of wildlife and number of the species ranchers had on their game ranches. This was evident considering recent increases in the poaching of rhinoceros for the purpose of extracting their horns. Ranchers are obligated to report the de-horning or translocation of certain animals to the Department of Environmental Affairs. The information transference resulted in cases of animals being poached the night after reporting to the Department of Environmental Affairs. Since this phenomenon is quite recent and increased the scepticism of ranchers, this drastically decreased ranchers' willingness to share information. Ranchers also use game ranches as safe havens for tax purposes and this made many ranchers unwilling to share financial information.

Although various approaches were considered to optimally answer the research question; many were eliminated due to the impeding nature of the above stated factors. The research focuses on qualitative information and makes extensive use of descriptive statistics, the following approaches were excluded due to the industry constraints and limitation factors:

- ***Surveys***: as stated, the WRSA is the largest industry association in South Africa. The WRSA's members did not constitute a representative group considering their members only represent approximately 10% of the population of ranchers. Surveys would have resulted in more accurate information regarding the general perception of ranchers towards investment appraisal techniques. Ultimately due to the lack of knowledge

relating to investment analysis of ranchers, this would not have yielded information that kept to the objectives of this study to develop an analysis methodology based on sound financial management principles. An important consideration was also the availability of internet access. Distribution of the surveys would have been impeded considering many of the ranchers are in remote areas within South Africa. The secrecy and general scepticism of ranchers, due to the above factors, would also have resulted in inaccurate information.

- ***Data analysis****:* due to the lack of accurate numerical or quantitative data relating to wildlife and the unavailability of research published this form of methodology was discarded. Elements of this methodology is apparent only in profitability analysis and price analysis of investments in high-value wildlife.

The research is based on two case study investigations of high-value wildlife investment companies, specifically relating to analysis and qualitative factors effecting investment in high-value wildlife. The case study method employed in association with the literature review and industry observations is appropriate considering Winstanley (2009:223) states that case studies often involve utilizing a range of techniques such as literature reviews, questionnaires, interviews, sampling and observations. The research design is based on the above-stated industry considerations and the assumption that high-value wildlife investment companies (operating with investors' capital) would have developed and implemented appropriate industry related analysis and appraisal methodology over time, surpassing that of general wildlife ranchers.

Additionally, high-value wildlife investment companies seek funding and investment from larger institutional investors and independent investors. These companies have to adhere to reporting and transparency requirements from these investors. Ultimately this results in the investment companies using more advanced financial analysis models and risk analysis techniques, in comparison to the average wildlife rancher.

A case study is an ideographical research that focuses on individuals rather than being concerned with greater members of a population (Terre Blanche & Durrheim, 2006:456). This is specifically important considering that this research aims to determine an appropriate

analysis guideline or approach, and not report on the general perception relating to analysis of high-value wildlife investment. Yin (2003:49) states that case study design is appropriate in the following cases:

- When the primary questions related to the study involves “why” and “how” questions.
- It is not possible to manipulate behaviour of those participants involved in the study undertaken.
- The researcher wants to cover contextual conditions related to the study, because the researcher is of the opinion that they are relevant to the phenomenon that is being studied.
- Where unclear boundaries among context and the phenomenon exist.

When taking the above-mentioned cases in account, the chosen methodology is appropriate considering that the primary questions relate to “how” investment appraisal techniques are implemented within the industry. Additionally the “why” question relates to why investment companies factor in certain economic principles and exclude others. The context under investigation relates to the implementation of the best practice analysis approach which this study aims to establish. By studying larger established high-value wildlife investment companies the researcher is enabled to gain better industry contexts and ultimately make better conclusions. Also considering that investment in high-value wildlife is a developing industry, the phenomenon of analysis or appraisal within the different case studies is indistinguishable from the context of game ranching.

Yin (2003) and Baxter and Jack (2008:544) describe how and when multiple case studies are considered (as is the case in this study) they should be used as either (1) a theoretical replication (prediction of contrasting results but for predictable circumstance), or (2) literal replication (prediction of similar results). Considering this and the topic of this study, multiple case studies are necessary to analyse the intrinsic variations among analysis approaches employed by the investment companies. Determining the appropriate number of case studies that needs to be undertaken by a researcher is a hazy subject, as each study is intrinsically unique with its own limitations and factors that need to be determined. Yin (2003:52) continues to state in extreme cases (such as this study) where new and rare phenomenon are studied and published information relating to the subject is rare, fewer case studies are appropriate.

The two case studies presented in chapter five are supplemented by expert interviews and a literature review in chapter three and four. The knowledge attained from the expert interviews (professionals, academia, public sector and private sector parties) act as supplication for the few case studies undertaken and is supported by the detailed literature review. The expert interviews are based on the same interview guidelines as for the case studies, only slightly adjusted for the purpose of determining the experts opinions relating to the answers given by the case study investment company. The expert interviews also serve as a basis from which additional information could be extracted that could not be obtained from the case studies.

The following subsection relates to a more detailed theoretical discussion of the sample selection, design and the sampling techniques utilized. A detailed theoretical discussion relating to the case study and interview methodology will follow later in this chapter.

2.5.1 Sample Selection and Design

According to Berenson *et al.,* (2006:3) a population can be defined as members of a group which enable the researcher to draw a conclusion. Blumberg *et al.,* (2011:228) continues to define a population as a group of individuals or entities that poses specific characteristics relating to a topic of research from which a sample can be taken (Brynard & Hanekom, 2006:55). A sample can be defined as a portion of the population selected by the researcher for the purpose of analysis (Berenson *et al.*, 2006:3).

The target population of the case study can be defined by the following characteristics:

- A company operating within the borders of South Africa.
- The company should operate within the wildlife industry.
- The company specializes in high-value wildlife breeding.
- The company should operate with foreign capital (investor's capital).

The target population for the expert interviews are based on the following criteria:

- Tertiary qualification or;

- 10 years' experience in the wildlife industry or investment sciences or;
- an academic or institutional rank or position relating to wildlife or investment sciences.

As defined earlier, a sample is a representation of a population. Sampling is a technique employed by researchers to select smaller representative group (Blumberg *et al.*, 2011:69). The sampled group is carefully chosen to determine the characteristics of the larger population relating to the study (Brynard & Hanekom, 2006:54; Durrheim & Painter, 2012:49). The core concept behind a sampling technique is to enable researchers to draw conclusions from the population by carefully selecting elements relating to the population group (Cooper & Schindler, 2011:374).

2.5.2 Sampling Technique

The study field of the case study consists of two high-value wildlife investment companies that were selected based upon non-probability sampling. The specific technique employed is commonly referred to as *Judgemental sampling* or *Purposive sampling*. The expert interviews are based on combination of *Snowballing sampling* and *Judgemental sampling*.

The following are examples of the various types of non-probability sampling set out by Deming (1990:31):

- ***Judgmental sampling or Purposive sampling*:** a type of non-random sampling, the sample is selected based on the opinion of an expert within the field of study. Results obtained from a judgment sample are subject to some degree of bias, due to the frame and population not being identical. The frame is a list of all the units, items, people, etc. that define the population to be studied. The researcher chooses the sample based on expert opinion and by the appropriateness of the chosen party for the study. This technique is primarily utilized where a limited number of companies or individuals are available and knowledge is scarce within the chosen field (Doyle, 2011:65).
- ***Convenience, Haphazard or Accidental sampling*:** members of the population are chosen based on their relative ease of access. The samplings of friends, shoppers at a specific single mall or co-workers are all examples of convenience sampling (Blumberg *et al.*, 2011:252).

- ***Snowball sampling*:** The first respondent or expert refers a friend. The friend also refers a friend, and so on. Such samples can be considered somewhat biased because the samples selected may be from a bias or homogeneous group with the same feeling and mind-set towards the matter being researched. This sampling method does not necessarily provide an unbiased selection of the population (Goodman, 2011:347).
- ***Deviant Case*:** The researcher selects specific cases that substantially differ from the dominant pattern.
- ***Ad hoc quotas*:** A quota is established (for example 65% women required for a study) and researchers are free to determine the respondent of the study as long as the quota stipulated with in the research design is met.

As stated above the techniques selected for the purpose of this study is based on non-probability sampling that does not adhere to the statistical principle of pure randomness (Blumberg *et al.*, 2011:139). Durrheim and Painter (2006:139) state that this method of selection is an appropriate methodology for research based on qualitative and quantitative research. While researchers such as Eisenhardt (1989:532) suggests that researchers utilize between four and ten case studies to receive a representative group from the case study, this research was unable to achieve the required amount of cases. This is mainly attributed to the fact that investment companies in high-value wildlife are considered to be developing and have not been in existence for long periods. The lack of cases studied is remedied by implementing additional methodologies such as expert interviews additional to a detailed literature review. The methodologies and design utilized within this study, in high-value wildlife as an investment alternative, was adherent to specific constraints to develop an appropriate logical way of analysis. The following subsection is a discussion of the theory behind case study and interview methodology.

2.6 RESEARCH METHOD

2.6.1 Background

As stated previously this research pertains to case study based methodology supplemented by expert interviews and a detailed literature review specifically chosen for the purpose of this

study. The first few subsections relate to case study methodology and the later refers to interview methodology.

The concept of a "case study" implies a singular form, limited to: individual department, sector, business entity, country or industry (Smith, 2011:134). Gillham (2005:1) and White (2004:40) continue to state that case study methodology is of a single situation, for example individual, group, business entity, community or institution. The main goal of this methodology is to answer the defined research question by critically looking at a specific situation.

Grix (2004:52) states that case studies enable the researcher to understand the essential characteristics encased in the study and address new or persistent problematic research areas. Case study analysis is an object in its own right and provides the researcher with the tools to provide in-depth calcifications relating to the researchers subject of study (Bryman & Bell, 2011:63). A case study can also be defined as an ideographical research methodology that focuses on individuals rather than being concerned with members of a population (Terre Blanche & Durrheim, 2006:456).

2.6.2 TYPES OF RESEARCH

Smith (2011:136) states that it is possible to deduce further research types encapsulated within the case study approach. The following are five research types set out by Rayn *et al.*, (2002:143) for accounting or financial management research studies.

a) ***Descriptive:*** Current practices are described in terms of procedures adopted. The study may seek to confer best practice principles or successful implementation labels. A descriptive study attempts to define or describe a subject relating to the study by creating a profile of a collection of problems (Blumberg *et al.*, 2011:10; Brynard & Hanekom, 2006:7-8).
b) ***Illustrative:*** Researchers explore the implementation and outcomes associated with new innovative practices.
c) ***Experimental:*** Research is primarily concerned with the conduct of the experiment that is studied in the field, thus where new treatments are applied in the field.

d) ***Exploratory*:** This method is usually employed to develop research questions and hypothesis. This type of research tends to gravitate towards loose structures with the goal of determining forthcoming research tasks (Cooper & Schindler, 2011:146).

e) ***Explanatory:*** The aim of this approach is to attempt to go beyond the mere description of a subject and ultimately elaborate and explain the reasons behind the studied phenomenon.

Durrheim and Painter (2012:44) discuss a broader grouping of the variety of research approaches relating to case study methodologies. *Exploratory, descriptive and explanatory research* are discussed above, for the sake of completeness the following three categories will be discussed:

a) ***Applied and basic research*:** The use of the research is the distinction between basic and applied research. Basic research traditionally attempts to develop the field of study's fundamental knowledge by adding new information. Whereas applied research focuses on contributing towards current practical and problem solving issues, applied research's findings have immediate practical applications while basic research focuses on the future (Durrheim, 2006:45).

b) ***Qualitative and quantitative research*:** A widely used distinction in research studies is the concept of quantitative and qualitative information (Blumberg *et al.*, 2011:191). The primary distinction among the quantitative and qualitative research refers to information available to the researcher and the information utilized to come to a conclusion. It can thusly be deduced that quantitative research refers to information of a quantitative nature, such as raw data in the form of numbers or observation. Qualitative information is based on information gathered by means of words or discussions and hard data from which conclusions cannot be made (Blumberg *et al.*, 2011:192; Smith, 2011:138). Smith (2011:139) states that qualitative and quantitative information is not contradictory but rather complimentary and should be combined to take advantage of the richness of qualitative findings and the potential rigor and increased credibility afforded to quantitative findings (Mellenbergh *et al.*, 2003:211). Henning *et al.*, (2004:3) states that the "variables" are not controllable by the researcher in a qualitative study, quantitative studies contrarily enable researcher full control of all the various components. It can thusly be said that in order for researchers to become

pragmatic researchers and students they should incorporate both qualitative and quantitative aspects to their research (Onwuegbuzie & Leech, 2005:375). Keeping in mind the above, two further classifications can be encapsulated within research. These two aspects refer to the rationing process utilized by the researcher: (1) inductive reasoning refers to reasoning in such a way that forming reasonable conclusions are based on gathering evidence and then forming principles based upon the particular concept (Brynard & Hanekom, 2006:16; Campbell, 2012). Inductive reasoning is the opposite of deductive reasoning. Inductive reasoning makes broad generalizations from specific observations. (2) Deductive reasoning or deduction, starts with a general statement, or a hypothesis statement, and examines the possibilities for the researcher to reach a specific, logical conclusion for the study based on the data gathered. (Blumberg *et al.*, 2011:25; LifeScience, 2012). This study, pertaining to analysing high-value wildlife as an investment alternative, is based on a deductive reasoning approach.

2.6.3 Strengths of Case Study Research

The advantages of the case study methodology being followed by researchers are numerous. It is generally considered that the advantages considerably outweigh the disadvantages (Merriam, 2009:105). Cohen *et al.*, (2000:184) states that case studies provide information that is based on real-life circumstances, resulting in believable and more manageable information. Merriam (2009:105) continues by arguing that case studies provide deeper, more relevant insights relating to entities or individual real-life practices and experiences.

Case studies are considered appropriate for researchers to generate and test new theories; this approach has extensively been utilized in the development of ground-breaking strategic management insights (Gibbert *et al.*, 2008:1465). The fundamental role of the case study methodology is that of the exploration of new ideas and theories (Otley & Berry, 1998:106). Case studies provide researches with the tools to circumvent too great reliance upon a single approach by combining several qualitative methodologies.

Case study research is an applicable, cost-effective methodology that does not rely on expensive technologies. A case study can be performed by a single researcher.

2.6.4 Weakness of Case Study Research

White (2004:43) states that despite many of the strengths relating to case study methodology, case studies tend to be individualist and generate large quantities of data. Smith (2011:135) states according to Humphrey and Lee (2004:xxv) that case studies are interesting but not academic in nature. He continues to say that case studies do not add knowledge and are extremely difficult to publish.

Blaxter *et al.*, (2010:73) states that the analysis and consecutive interpretation of the data supplied by a case study must be done rationally, sensibly and systematic in nature, otherwise the interpretation might be distorted and the researcher might produce inaccurate and unreliable findings (Blaxter *et al.*, 2010:74). Gibbert *et al.*, (2008:1465) states that there are several concerns relating to case study methodology being utilized correctly and thoroughly. If the methodology is incorrectly utilized, the validity and reliability will be greatly affected.

Another disadvantage listed in Blaxter *et al.*, (2010:74) is that researchers become more aware of inter-connected links relating to events, variables and conclusions pertaining to the study through case studies. These complex links could result in researchers losing sight of the mainstay of the study, ultimately resulting in inappropriate recommendations and conclusions being drawn from the perceived data. Researchers are the primary instrument in the analysis and collection of data pertaining to a case study. Thusly the research is limited by the sensitivity and integrity of the investigator (Merriam, 2009:105).

2.7 DATA COLLECTION TECHNIQUES

As stated earlier the collection of data or information is based on whether the information is of a qualitative or of a quantitative nature. Smith (2011:138) states that these two forms of information are not contradictory but rather supplementary to each other (Brynard & Hanekom, 2006:35). Ramadass and Wilson (2009:69) state that data collection techniques afford researchers the ability to systematically gather data about the object of the studies the researchers are concluding as well as the situations in which the information occur. The data collection methodology within this study will now be discussed in the following sub-section.

2.7.1 Interview Guideline

An interview guideline based on a literature review of financial management resources relating to investment analysis was prepared. The literature review was supplemented by discussions held with experts pertaining to investment in high-value wildlife. The guideline enabled the researcher the means to accurately compare the interviewee's responses, whilst providing structure for the information that needed to be gathered from the line of questioning. The interviews were slightly adjusted for the case studies and the expert interviews, since specific information such as company background and information would not have been relevant or required from the expert, as only their opinions relating the questions subject were required. The interview guideline can be found in the appendices as Addendum A of this dissertation. The case studies and the expert interviews were recorded using a hand held digital recorder for later analysis, which is also available on request.

2.7.2 Interviews

According to Neuman (2012:274) the goal of an interview is to acquire precise information pertaining to the researcher's study from a party. As stated previously face-to-face interviews were utilized in this study as a measurement instrument and to gain information relating to high-value wildlife investment.

Neuman (2012:274) continues to state that an interview consists of structured or semi-structured questions that are formulated prior to the interview. The respondent's answers to the interviewer's questions and a record of the answers should be kept by the interviewer. Babbie and Mouton (2001:249) states that face-to-face interviews are the most common method of information or data gathering utilized within South Africa. One of the most important sources of information in a case study, according to Yin (2012:106) is the information gained from a personal two-way discussion in the form of an interview (Blumberg *et al.*, 2011:281).

A structured interview according to Leedy and Ormond (2013:199) entails a successive series of fixed questions that flow in a predetermined order similar to that of a questionnaire (Breakwell, 2006:240). A semi-structured interview (as followed in this study) according to

Leedy and Ormond (2013:199) also follows a fixed successive question form but includes probing questions in order to help clarify the information obtained. Neuman (2012:260) states that the question within either a structured or semi-structured interview can entail open-ended or closed-ended questions or a combination of the two. The difference, according to Breakwell (2006:161) between open and closed-ended questions, is that closed-ended questions have pre-fixed answers that are supplied to the respondents. Open-ended questions contrarily allow respondents to answer a question as they see fit.

According to Middelberg (2011:118) the methodology relating to interviews allows the researcher to clearly explain and detail the questions stated to the respondent. This is particularly advantageous if the interviewee did not understand the question. Additionally the interview approach affords the researcher the ability to probe for more in-depth information and detail that would otherwise not be possible (Blumberg *et al.*, 2011:281; Brynard & Hanekom, 2006:40).

The questions pertaining to the interviews relating to this study of investment in high-value wildlife is primarily based a combination of open and close-ended questions. This was specifically implemented in order to gauge interviewee's questions in relation to each other and to ultimately formulate best practice guidelines relating to investment in high-value wildlife.

2.8 RESEARCH ETHICS

The Farlex Financial Dictionary (2010) defines research ethics as the application of fundamental ethical principles to an assortment of topics involving scientific research pertaining to a study. Ethics entail a set of ethical rules or guiding principles of behaviour that must guide business entities or professional participants (Longman Business English Dictionary, 2001:161). Tseng *et al.*, (2010:587) states that ethics relates to the study of the human condition and the philosophy of human behaviour relating to guiding principles of individuals, with emphasis on concept of right and wrong. When considering these definitions in context to the above definition of research ethics we can conclude that research ethics is the

manner in which the researcher is accountable to good research methodology, integrity and personal behaviour whilst conducting his research.

As a data collection techniques are developed, researchers should always consider the potential effect that their studies or questions could have on the respondents, albeit physical or emotional distress (Gillham, 2005:85). Violating the confidentiality right held by the interviewee should always be avoided, whether it is by posing sensitive questions, bearing witness to sensitive behaviour or relinquishing information that is not public (Ramadass & Wilson, 2009:51).

Winstanley (2009:91) states that it is paramount that the interests and rights of all the involved parties are protected by the researcher. He suggests that the following guidelines be adhered to by researchers:

- Carefully consider the consequences of the research.
- Always gain approval from the subject to be researched.
- Maintain high standards of research practice, specifically relating to data collection, storage and distribution of information.
- Obey legislation relating to privacy, human rights and data protection.

White (2004:27) states that researchers should always follow a prescribed code of ethics when conducting research. MacFarlane (2009:63) lists the following set of guidelines or codes of practices that relate to research ethics when the prescribed code in not available:

- Only include participants within the studies with the approval and awareness of the person involved.
- Never force or pressure participants to take part in the research.
- Do not withhold information from the involved parties relating to ulterior motives on the true nature of the study undertaken.
- Always be truthful and do not mislead participants.
- Do not persuade participants to disclose information that might harm confidence.
- Do not expose people to circumstances which could cause mental distress or physical harm.
- Always respect the right of confidentiality; and

- Treat every participant congruently and with respect.

The design and execution of research and the ethical implications thereof is an important factor to consider whilst planning one's research. The collection of data or information from a source usually involves people, whether the source is an individual or company. Because people are an integral part of data collection certain concerns evolve due to the information that is transferred to the researcher. Oliver (2010:11) states that ethical considerations are and should be some of the foremost considerations for researchers. Winstanley (2009:91) concludes that the ethics of the research should form part of research design, specifically referring to the research methodology followed and research sample selected.

It is the researchers' obligation and imperative to protect the human dignity and rights afforded to the companies and individuals related to the study, and thusly not cause any harm (emotionally or physically) to the parties involved in the research (Macfarlane, 2009:63). Considering the primary objective of this study is to determine a best practice model for the analysis of investment in high-value wildlife on quantitative and qualitative basis, it is worth noting the following.

Ethics was a major factor that needed to be taken into consideration, due in large to the nature of this study. The constraints and industry factors discussed earlier in this chapter which included: the secretive nature of the industry and the relative young age of the investment industry pertaining to high-value wildlife, resulted in being a guiding consideration for the study. High-value wildlife investment companies (participants in the study) will supply sensitive information relating to their financial models, cost structures and analysis methodology implemented. Considering the relatively young age of this specific investment industry, a break in confidentiality would result in a loss of competitive advantage for these companies.

Additionally if the researcher realized that the investment companies utilized incompetent, unethical, financially inaccurate or illegal financial management practices, this could have dramatically negative implications for these companies (if named or disclosed) and their investors. The researcher has an obligation towards these companies to abide by the right of confidentiality and ultimately protect the privileged information supplied. This is done by not

naming the investment companies involved nor the experts interviewed. The information gathered will only be published in a completely analysed form from which the recommendations and conclusions will be drawn pertaining to this study.

2.9 SHORTCOMINGS AND SOURCES OF ERROR

Considering the constraints listed in this chapter, there are specific shortcomings and potential sources of error pertaining to the analysis of high-value wildlife as an investment alternative. Specific sources of error relate to the nature of the wildlife industry and the attitude of the related parties' willingness to share information with the researcher. The lack of published research pertaining to investment in high-value wildlife is also a worrisome aspect since no benchmark can be established. The primary information gathered in this study is based on a case studies methodology of high-value wildlife investment firms, supplemented by expert interviews. The interviews (the firms and experts) are reliant upon the interviewee's own personal understanding of concepts and theories relating investment in high-value wildlife.

2.10 CONCLUSION

This chapter focused on indicating the rationale behind the chosen research design and methodology employed by the researcher. Research design is end-product orientated, serving as a blueprint or plan for the study. Research methodology relates to the processes, tools and procedures utilized to reach the ultimate set out blueprint or plan.

As stated earlier this study consists of a case studies research design that is supplemented by expert interviews and was conducted following both a qualitative and quantitative approach. This chapter aimed at carefully motivating the chosen design and methodology whilst scrutinizing and comparing the chosen design and methodology against other possible options.

The sampling technique utilized was a non-probability judgemental technique and adheres to Yin's (2003) extreme case exemptions. The data collection technique utilised in this study is a semi-structured questionnaire utilized during the interviews. Considerations of research ethics were also discussed. The chapter concludes with the possible shortcomings and sources of error relating to this study.

The following chapter will give an overview of the nature of investments, on-hand of various types of investments. This will enable this research to establish a comparative framework by which high-value wildlife as an investment can be benchmarked against traditional investment options. The following chapter will ultimately assist in meeting the objective (as stated in chapter one) to contextualize high-value wildlife within the investment landscape.

CHAPTER 3: NATURE OF INVESTMENTS

3.1 INTRODUCTION

One of the cornerstones of financial planning and financial stability is the concept of saving. Without proper financial planning it is unlikely that an individual will ever achieve financial freedom and be able to retire comfortably (Botha *et al.*, 2010:33). For the purpose of this research saving is defined as an economy of/or decrease in time, money or other resources with the aim of securing the financial prosperity of an individual or a family unit (Appleby, 2012; Oxford, 2010). Saving and investing are related terms, but they are not interchangeable and can be seen as independent processes of each other. Saving entails liquidity with or without inflation performing growth, whereas investment is the process of generating acceptable returns at a predefined risk tolerance annually (Kennon, 2008).

Investment professionals define investment as a current commitment of currency for a defined period of time in order to derive the future payments that will appropriately compensate the investor for: (1) the capital or funds that the investor committed to the endeavour; (2) the expected rate of inflation during the investment; and (3) uncertainty or risk taken in order to receive future payments (Brown & Reilly, 2009:5). The "investor" can be an individual, a government body, a corporation or a pension fund, but for the purpose of this study the research will mainly be focused on individuals.

Economists define investments contrarily to investment specialists and financial planners. A concatenated definition of investments can be described as the means of producing an item/good that will in turn produce other items/goods, and this endeavour is undertaken to supplement income at a later stage in life by committing capital (Hassett, 2008; Investopedia, 2013m). This definition is an alternative to the popular definition whereby a decision is made to purchase investments such as equity shares, bonds, mutual funds and/or alternative non-financial investments such as real estate.

Creating financial freedom when retiring has eluded millions across the globe, the rich become richer not exclusively through hard work but through understanding their investment options (Tresidder, 2013). Personal investment or saving is key to becoming financially free after retirement. A survey of the most affluent Americans (averaging or making more than $225,000.00 thousand per annum) found that 27-30% of all their income went into various investment classes or savings in some form (Kennon, 2013). In recent years South Africa has been swamped by rapid increases in unsecured debts with average household debt in South Africa standing at 75% of disposable income, leaving little to none for investing and saving (Moneyweb, 2012). Therefore becoming wealthy can be attributed to making sound decisions relating to spending and investing.

The earning and spending of funds is an inevitable reality of life. Consumption seldom desires balance exactly when considering the earning potential of an individual. This imbalance results in individuals having excess available funds one month, and not enough funding to make ends meet the next. This can mainly be attributed to fluctuations in the needs of individuals. To compensate for these imbalances in discretionary income, individuals would either turn to borrowing or save/investing to exploit the long-term benefits from their income (Brown & Reilly, 2009:3)

An income that exceeds the consumption desire of an individual tends to be saved or invested for future prosperity. When considering how to utilize excess funds, individuals have many options available. The first of these options entails holding onto the physical asset (or savings) in a safe at home, or a deposit box at a financial institution (Brown & Reilly, 2009:3). The second option entails relieving the individual of the immediate possession of these available funds or savings for a future greater amount, available for consumption on a later or future date. This trade-off of current consumption needs for potential higher levels of future consumption is the primary reason for saving (Bodie *et al.*, 2010:3). This correlates with the above definition of investment where an individual increases or duplicates savings over time which can be seen as an investment.

By deferring from consumption or giving up immediate possession of savings, individuals expect to in future receive a greater amount than what they gave up. The reverse is also true of individuals who consume more than that they can afford (on their current income): when

funded by loans, these individuals must be willing to pay back more in the future than that the amount that was borrowed (Brown & Reilly, 2009:5).

3.2 INVESTMENT NATURE

This section relates to investment nature which addresses aspects that are intricately woven into investment decisions when investors are considering a potential investment. The nature of an investment ultimately refers to the many qualitative elements that an investment might entail.

3.2.1 ACTIVE VERSUS PASSIVE INVESTING

As stated earlier, investments are important to any fundamental retirement planning. How an investment is structured within a portfolio is solely in the hands of the investor or his investment professional; or the responsibility can be shared between them (Erasmus *et al.*, 2003:105). Within the investment landscape there are numerous ways of choosing among investments, which will be discussed later in this chapter. There are two primary strategies that can be taken into account when considering an investment namely active and passive investing (Brown, 2013; Hull, 2011:67).

3.2.1.1 Passive Portfolio Management

Passive investment, according to Erasmus *et al.*, (2003:105), implies that investors are not continuously tinkering and changing their investments, nor are they actively busy managing their portfolios. A simplified example of this is when an investor buys assets which he intends to keep for a substantial period since he is of the opinion that it's a good long-term investment (Malan, 2008:48).

Another example of passive investment is when an investor outsources the investment decision to investment professionals or institutions (with the needed knowledge and skill) that actively manage the investments on his behalf; therefore requiring little to no input from the investor's side (Erasmus *et al.*, 2003:105).

Examples of passive investment:

- **Unit trusts -** managed by professional investment managers or institutions.
- **Freight containers -** managed by export or import management companies.
- **Certain Property** - managed by letting-agents or property specialist management companies
- **Wildlife -** Wildlife investments where ranchers or Game farms care for and manage the animals for a share of the profit, usually a 50/50 share of the offspring. This kind of agreement has been subjected to a 5 year minimum investment period in the past, highlighting the passive nature of the investment.

3.2.1.2 Active Portfolio Management

Botha *et al.*, (2003:105) describes active portfolio management as a strategy where investors are consistently managing, adjusting and monitoring their investments. This monitoring also pertains to economic climate changes so the investor can actively judge when to buy and sell an investment to make a profit (Steinert-Threlkeld, 2012:1).

Investopedia (2012b) and Botha *et al.*, (2003:105) have identified two primary differences among an active or passive investment strategy:

- **Security selection***:* This is a term for buying the right shares of profitable investments (shares, bonds, funds, or any other asset) and avoiding non-performing assets. It means having the foresight to buy Apple in the pre-iPod days and not to buy Netflix or Facebook at the initial share offering. Active investment strategists manage this choice of potential shares by themselves whereas passive strategists rely on professionals or institutional management.

- **Market timing:** Markets movement or gyrations, if correctly predicted, can be very profitable to investors with the insight to adjust their portfolio ahead of time. This does not only include an increase in profit, but can also decrease potential losses. Actively managed strategists have to adjust and predict the timing of investment on their own, whereas passive strategists' investments are adjusted by professionals or institutional management.

3.2.2 GAMBLING, SPECULATION AND INVESTMENT

Many individuals believe that investments imply gambling or speculation, but according to Erasmus *et al.,* (2003:1) this can mainly be attributed to ignorance. Sceptics, and legions of individuals who do not have experience in investment regard investing as another form of gambling. This misinformed view has kept many individuals from enjoying the financial rewards of judicious investment in the economy, which generally, over the long run, tends to be profitable. It must be considered that investment purposes vary amongst investors. Where one individual sees an investment in a holiday home at the coast as a sound investment, another will see it as a speculative investment.

3.2.2.1 Gambling

Gambling can be defined as playing any game of chance for stakes and a potential higher return. The stakes refer to risking money or something of value with the outcomes involving chance, bets or wagers (Davies, 2012). When an individual executes a decision or activity without prior knowledge of what the future outcome may be, this activity can be seen as gambling (Erasmus *et al.*, 2003:1).

Based on the intrinsic characteristics and risks involved, gambling in general seems to be a bad bet. Even though the chances for extraordinary gains do exist, the margins are too slim to be considered an investment in any regard. Gamblers are at a distinct disadvantage no matter how smart or lucky they are. Luck, or what Davies (2012) and Erasmus *et al.,* (2003:1) term “the X-factor”, may favour the gambler for a single bet, or it may favour them for a long run, but both are ultimately temporary and therefore not viable long term investment options.

3.2.2.2 Speculation

According to Investopedia (2010f) gambling is defined as the act of trading in an asset, or conducting a financial transaction, and both these actions entail a significant risk of losing all or most of the initial outlay. The expectation being to in future making a substantial gain through the speculative action. Speculation has the inherent risk of loss, but is offset by the probability of a huge gain. Otherwise, there would be very little motivation to speculate. Erasmus *et al.*, (2003:3) defines speculation as when an individual ventures capital (either his own or capital belonging to other individuals/companies) on an activity with the future expectation of large returns in a very short period. The study and knowledge of similar transactions can be utilized to increase the probability of higher returns. As previously discussed, investments consist of the purchase of a financial or non-monetary asset for the purpose of retaining thus mentioned asset for a defined or considerable period so that it can appreciate in value and provide reasonable returns for the investor. Investment return is based on capital appreciation and applicable cash inflows over the life of the asset. Although speculation may result in greater returns over a shorter period in time, it can inherently result in a negative outcome and considerable loss, and is therefore seen as risky.

While speculation is often confused with gambling, the key difference is that speculation is generally tantamount to taking a calculated risk and is not dependent on pure chance, whereas gambling depends on totally random outcomes or chance.

An example of speculation is when an individual decides to obtain an additional property in addition to one's principal residence with the intention of leasing it to a third party. This additional property would qualify as a bona fide investing action. Buying half a dozen apartments with minimal down payments for the purpose of "condo-flipping" would unquestionably be regarded as speculative.

Whether an activity can be defined as speculative or as an investment depends on a number of factors. These factors include (1) the nature of the asset (2) the expected duration of the holding period (3) and the amount of leverage.

3.3 FINANCIAL ASSETS VERSUS REAL ASSETS IN INVESTMENTS

The productive capacity of any economy is encapsulated in the material wealth of a society, whereas the services and goods that the country can produce is the economic driver. Assets used to produce services and goods (real assets) are the foundation of the productive capacity of a country. Productive capacity is based on assets such as equipment, land, buildings, knowledge and human capital (Bodie *et al.*, 2010:3).

A non-financial asset has a physical value such as real estate, equipment, machinery, gold or oil. Commodities, which are tangible objects with inherent values, are examples of non-financial assets. High-value wildlife can be categorized as a non-financial asset considering that it shares physical form as with the above examples. Investopedia (2013h) defines these tangible or non-monetary assets as quite literally, perceptible to the senses. It is an investment in an asset that investors can see, hear, touch and taste (careful consideration is needed when considering the investment, for example an investment in wine). Gold can also be considered a non-financial asset because it has inherent value based on its use in jewellery, electronics, dentistry, ornamentation and its historical use as a currency (Investopedia, 2013c).

Contrarily to real assets or non-financial assets, financial assets are securities that are merely computer entries or sheets of paper issued to investors. Financial assets do not directly contribute to the productive nature of an economy. Instead these assets are the means by which individuals hold the claim on real assets (Bodie *et al.*, 2010:4; Cheng *et al.*, 2010:126). Bodie *et al.*, (2010:4) describes financial assets as claims on an income from governments or real assets (land, building etc.), or the income generated by them. Investopedia (2012c) further defines financial assets as assets that derive its value from contractual claims that are not of a tangible nature and do not necessarily have physical worth (Shahid Ebrahim & Hussain, 2009:150).

Cash, for example is a financial asset because its value is based on what it represents. The paper the cash is printed on has very little value by itself. The value of a financial asset can be based on the value of a nonfinancial asset. For example, the value of a future contract is based on the value of the commodities represented by that contract.

For the purpose of this study a financial or monetary asset can thus be explained as a non-tangible asset that derives its intrinsic value from a contractual obligation or claim to income from various sources that do not necessarily have physical worth. Financial assets determine the allocation of wealth or income among investors whereas real assets generate net income to an economy. As stated above individuals have two options: to consume what they earn or to invest that income for the future. Considering this statement, investors have two basic categorical options when investing: financial assets such as equity, bonds or mutual funds, or physical non-monetary options such as art, property or coins. Financial assets and alternative non-monetary investment options will be discussed in detail in chapter four.

3.3.1 THE INVESTMENT PROCESS

Every individual's lifespan contains a succession of choices and decisions each with multiple outcomes and possible alternative future actions. These decisions some trivial and some important, are in occurrence over estimated or under-estimated depending on the processes followed by individuals. Frequently, important decisions are made without a clear understanding of the possible alternatives. Individuals do not fully comprehend the favourable and unfavourable consequences of each choice of alternative action (Oakford, 2007:1; Swart, 2012:336).

Figure 1.2 depicts the investment process:

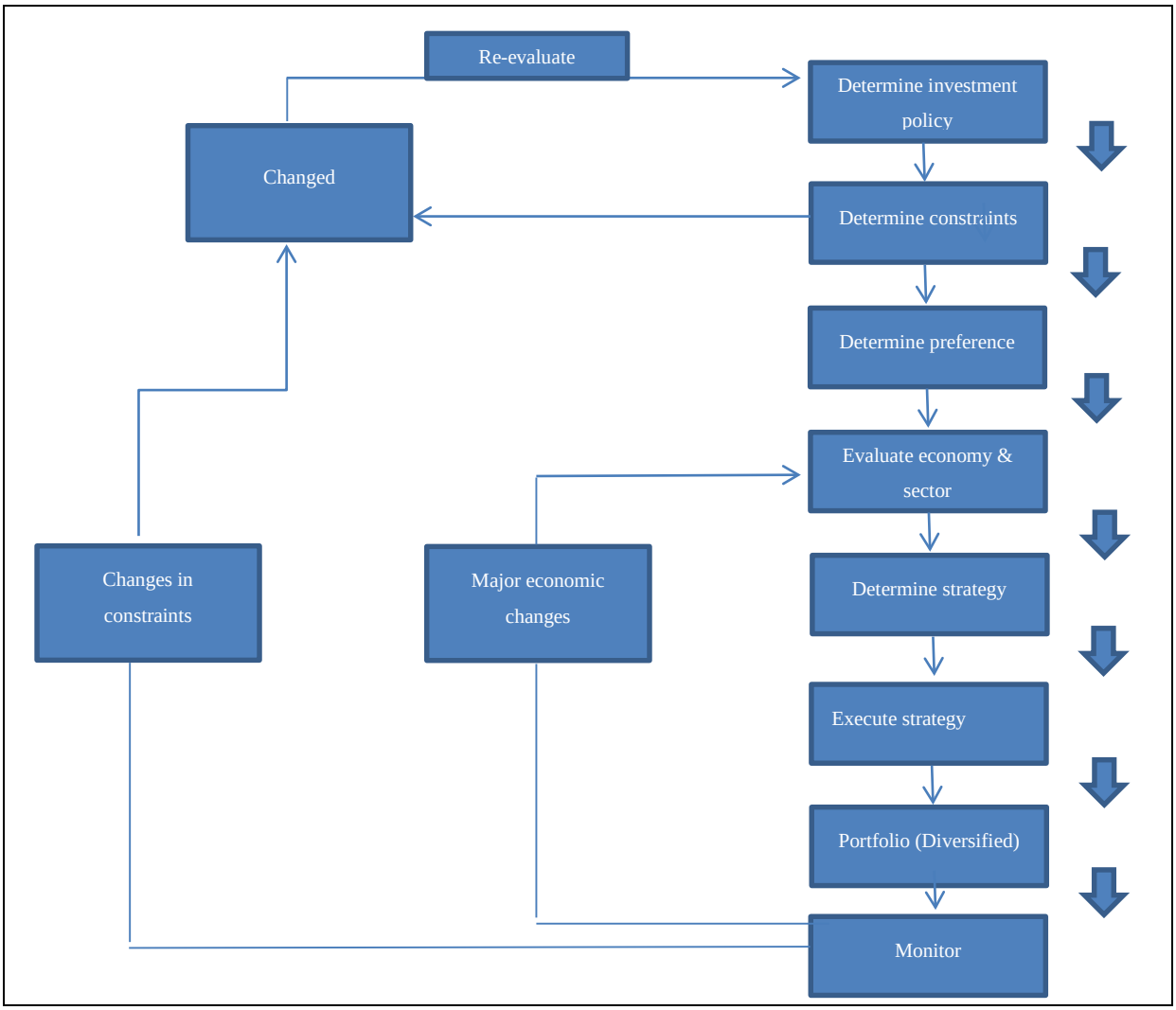

Figure 1.2: The investment process.

Source: Erasmus *et al.*, (2003:103)

The following four steps set out by Erasmus *et al.*, (2003:102) aim to explain the investment process:

Step 1: Investment Policy

Investors must compile an investment policy that complies with the needs and wants of the investor. The two most important aspects such a policy must consist of are investment objectives and investment constraints.

Compliance of these two aspects is of the utmost importance and must govern every investment decision (Botha *et al.*, 2010:383). As an investor's needs change over time, it is of importance that this investment policy is regularly adjusted to reflect the change in needs of the investor. These changes may be driven by market circumstance or a changing of the investors' own preferences (Erasmus *et al.*, 2003:102).

Step 2: Economic and Financial

Investors have to study and gain knowledge to enable them to forecast future trends and changing economic and financial circumstances. The investor's needs (as depicted in step 1) and expectations will in future govern his investment strategy (Erasmus *et al.*, 2003:103). Due to the dynamic nature of investments and the economy, investors are required to monitor, regularly re-adjust and/or re-position their investments in order to adapt to the expected changes in financial markets (Botha *et al.*, 2010:381).

Step 3: Portfolio Compilation

Taking the investor's investment policy and present economic situation into consideration, the next step for the investor will be to construct a portfolio which spreads the investor's investments across different asset classes, instruments and across various countries. Investors should therefore endeavour to compile a portfolio that will satisfy their expected returns as defined in their own investment policy, also keeping in mind that their investments should also fall within their risk tolerance levels (Botha *et al.*, 2010:387).

Step 4:Monitor Investment Needs

The forth step set out by Erasmus *et al.* (2003:102) states that investors have to continuously monitor their investment needs and the state of the economy. If the investors deem it necessary, they can adapt or adjust their investment policies to reflect the change in investment strategy. During this review or monitoring phase the performance of the portfolio should be regularly compared and re-evaluated to the investors expected returns.

A portfolio of investments is usually constructed within the framework of constraints, and these constraints are reflected in the investment criteria discussed in the following subsection.

For the purpose of this study the investment decision making process will closely resemble capital budgeting or investment appraisal techniques. This is due to intrinsic similarities such as specified budget (capital constraints) and defined period. The rationale behind this principle is that personal investments should be analysed and approached almost in the same way that corporate finance accountants approach decision making. Correia *et al.,* (2012:7-4) defines capital budgeting as methods pertaining to the analysis and evaluation of investment projects that shall produce economic benefits for a defined period. CIMA (2012) further defines investment appraisal as mainly being concerned with maximizing shareholders benefit in respect of decision making when considering various investment opportunities. Capital rationing techniques intrinsically imply decision making. Good investment decisions are made by taking all the various factors and information available and translating them into action. The criteria and the characteristics of investments allows for a framework by which investors can direct and make good decisions upon.

3.4 INVESTMENT CRITERIA AND CHARACTERISTICS

Criteria, according to a dictionary definition relates to a standard to which something such as an investment can be judged (Oxford, 2013). This definition is further described as a rule or test that something has to pass in order to be classified within a specific category (Collins English Dictionary, 2012). Characteristics are defined as the distinguishing features of quality of something (such as an investment); or an integral part of a common logarithm (Random House Kernerman Webster's College Dictionary, 2010; The American Heritage Dictionary of the English Language, 2009a).

Investment criteria mentioned in this text is a concatenated version of important criteria, characteristics and critical factors that are mentioned in various academic texts. This is mainly because Swart (2012), McRae (1997) and (Botha *et al.*, 2010:4) all use these four terms interchangeably throughout their texts. What is also evident from the literature is that there are overlapping topics, factors, considerations and subsections with extremely similar content within all the above mentioned texts. An example of this as stated by McRea (1997:23) is that

the two most important characteristics of investments which concern investors are risk and return, whereas Swart (2012:228) includes risk and return as important criteria that needs to be included in the process of evaluating investments. Liquidity, growth, income, timing and tax considerations are all examples of overlapping topics discussing many of the same principles in these textbooks.

For the purpose of this literature discussion of criteria, characteristics, critical factors and attributes, investment criteria will be discussed in accordance with "The Swart Model" for personal financial management relating to investment (Swart, 2012:228). Additionally investment attributes will be discussed in accordance to McRae's (1997:23) methodology relating to investment attributes, with the specific aim to distinguish intrinsic differences between financial and real assets. This will be discussed in detail in chapter four. Overlapping subsections or topics will only be included in either criteria or investment attributes. Critical factors will be discussed in the light of aspects that affect investors' decisions when considering an investment and setting up investment objectives.

3.5 Investment Theory and Investment Criteria

Potential investors in any asset class should carefully consider and be aware of the following criteria set out by Swart (2012:241) when evaluating investments. Various aspects affect the choice investors make regarding their investments and the following criteria is seen as the most important set out by Swart (2012) in his book *Personal Financial Management: The Southern African Guide to personal financial planning*. The criteria will be analysed in detail relating to higher-value wildlife in the final chapter in this study.

3.5.1 Income

Income is defined by the American Heritage Dictionary (2000) as an amount of money, cash or an equivalent received during a period of time in exchange for services, labour, sales or as a profit from investments made. Collins English Dictionary (2003b) additionally states that income is a return, monetary or by other means, which is earned or unearned, accruing over a defined period in relation to inflow or influx of receipts or revenue. These definitions clearly

state that income does not purely entail cash receipts, but can include intrinsically defined capital growth that will realize at a defined date.

According to Swart (2012:241) not all investors are interested in only pure capital growth. Some investors prefer a fixed regular income irrespective if the value of an investment decreases as a result of inflationary effects. Swart (2012:241) states that this varies in needs and consequences depending on the age of an investor. Lack in capital growth will be disastrous for a 20-year-old over the long run, with life expectancy being dramatically different in comparison to a 75-year-old. For a 75-year-old this might be different because his needs are different from that of a younger investor. This is because retired or older investors might have the need for a stable monthly income in order to fund their expenses during their retirement (Hallman & Rosenbloom, 2009:16). Income can therefore be a stable regular amount with or without capital growth, or a lump sum, all depending on the nature of an investment. Examples of income include fixed-interest-bearing securities, dividends from equities, and within the context of this study, the sale of a herd of wildlife at an auction.

3.5.2 Growth

When considering investments, growth relates to the capital growth of the investment or the increase in the asset's market price, or an appreciation in value. Capital growth is defined as the amount by which proceeds from the sale of an asset, capital in nature, exceeds the original purchase cost of the asset if it were to be sold (Collins English Dictionary, 2003a). Swart (2012:241) underscores the importance of an asset to appreciate in value in order to improve the cash position of the investor after the sale of the asset. The importance of capital growth cannot be understated and it implies that an investment should increase annually by at least inflation, since an increase below inflation would indicate negative growth or negative real growth of the investment (Botha *et al.*, 2010:386).

Examples of capital growth include sale of investment in shares, sale of wildlife offspring, and the sale of a ranch where the price has grown over time.

Taking the above definition into consideration, capital growth can be calculated as follows:

$$Capital\ growth = \ Initial\ capital\ outlay - current\ market\ price$$

Capital growth can also be expressed as a percentage by utilizing the following formula:

$$Capital\ Growth\ \% = \frac{(Market\ price - Initial\ capital\ outlay)}{Initial\ capital\ outlay} \times 100$$

3.5.3 Flexibility

Flexibility implies adaptability or responsiveness to change (The American Heritage Dictionary of the English Language, 2009b). Changing market conditions affect investments, and potential investors should therefore consider that in the future their needs and circumstance may also change. Determining if adjustments can be made to an investment can have dramatic effects on the performance of an investment (Swart, 2012:242). This is because flexible investments can adapt to changes in circumstances and conditions.

An example of flexibility relating to investments is:

- Possibility of converting one kind of a share to another kind or selling one specific wildlife species to buy another.

3.5.4 Liquidity

The term liquidity is sometimes used to describe investments that one can easily buy or sell. For example, one could sell several hundred shares of a blue chip share by simply calling one's broker, in other cases this might not be possible as is the case where investors want to sell real estate or collectibles (Farlex Financial Dictionary, 2012d). Liquidity, as defined by Investopedia (2012d), refers to the degree of ease in which an asset or security can be bought or sold within the market without affecting the asset's price, and thus pertains to the convertibility of an asset into cash (Farlex Financial Dictionary, 2012d). A liquid asset or security can be easily bought or sold with little or no impact on price. Most methods of counting money supply include some highly liquid investments such as certificates of deposit. Liquid assets and investments are highly desirable as they may be sold to allow an investor to enter other investments as the opportunities arise. On exchanges, liquid investments usually have low bid-ask spreads (Campbell, 2012d).

Swart (2012:241) refers to how certain investors deem it important that their investments can easily be converted to cash, accessed within a fairly short timeframe, and at short notice. Botha *et al.,* (2010:384) states that most investors confuse the concept of liquidity with time. Investors opt to invest in money market investments because these offer them the ability to access their money at short notice, especially in case of an emergency. What investors often need is the ability to realize their investments at short notice. The difference between liquidating cash-equivalent investments and securities like shares and bonds, however, is that securities constantly fluctuate in value (Campbell, 2012d). So while one may be able to sell them readily, one might sell the assets for less than what one paid.

Botha *et al.,* (2010:385) states that in many cases liquidity is sacrificed for higher returns, as in the case of fixed deposits. While these investments may be liquid, their growth potential could decline and the investors might be subject to release-fees. If investors can convert an asset to cash easily and quickly, with little or no loss of value, the asset has liquidity.

Examples of liquidity:

- Investors can typically redeem shares in a money market mutual fund at R10,00 a share (Investopidia, 2012).
- Investors can cash in a certificate of deposit (CD) for at least the amount you put into it, although they may forfeit some or all of the interest they had expected to earn if liquidated before the end of the CD's term.
- Investors in wildlife can sell their animals at auction for at least the amount they were bought but are reliant on set auction dates. Informal trading among ranchers also enhances the liquidity of these animals.

3.5.5 Taxability

The needs of investors vary and certain investments are preferred above others. This preference is subject to many factors, one being the taxability of return on investments (Swart, 2012:242). According to Swart (2012:243) investors with high taxable income will prefer investments that

are only partially taxable or investments that yield tax-free returns. Thus high returns are inadvertently played down against tax-free income (Swart, 2012:242)

3.5.6 Investor's tax rate

Swart (2012:243) states that investors will largely be influenced by the choice of investments in respects of their marginal tax rate. In the case of investors falling in the high income category (associated with high tax liability) a tax-free or capital growth investment will be preferable to regular income.

The mainstay of this study is not on the tax effects of high-value wildlife, and tax is specifically excluded in the scope of this study. Although some general broad references in regards to taxation will be made the focus of this study does not include taxation.

3.5.7 Ease of Management

Investors need to carefully consider whether they have the knowledge and expertise required to adequately manage their investments. Where a portfolio of equity shares requires specialized knowledge, it is recommended that management should preferably be left to a professional such as a stockbroker. Any investment can be undertaken by an individual who is willing to invest the time and energy to learn the industry and how it works (Appleby, 2012). From the point of view of investment managers it is highly advisable to evaluate and re-evaluate investments continuously in order to rebalance and/or replace them (Swart, 2012:243).

Botha *et al.*, (2010:136) states that average investors do not possess the necessary expertise to manage investments by themselves. Swart (2012:244) recommends that investors discuss the finer details with an expert at least once a year. Due to the vast amount of investment options, each with their own risks, return and characteristics, it is paramount to determine if one has the necessary expertise to manage an investment in an appropriate manner. If an investor feels that he does not have the time and energy to meet the proper management requirements, the investor has to consider passing the buck to a professional investment manager who is better equipped (Appleby, 2012).

Examples of ease of management:

- Speculators who aim to speculate in equity, have to considered weather they have the needed expertise to re-balance and adjust their portfolio.
- Investment in art takes a fair degree of knowledge and know-how relating to which artworks to buy and the maintenance relating to such investments.
- Investment in wildlife requires knowledge attributed to farming and agricultural development.

3.5.8 Risk

Risk, according to the Farlex Financial Dictionary (2012g) is the uncertainty related to any investment. This risk is determined by the possibility that the actual return on an investment will be different from its expected return. A vital concept in finance is the idea that an investment that carries a higher risk has the potential of a higher return. In other words risk is the possibility that one could lose money if an investment provides a disappointing return (Campbell, 2012f). All investments carry a certain level of risk, since investment return is not guaranteed. According to modern investment theory, the greater the risk one takes in making an investment, the greater one's potential return can be if the investment succeeds. As a rule of thumb, if investors are unwilling to take at least some investment risks, investors are likely to limit their investment returns (Dictionary of Financial Terms, 2008b). An investor's attitude or tolerance towards risk determines the type of investment he will prefer (Swart, 2012:242).

Examples of risk in relation to investment:

- Investing in start-up companies carries considerably more risk, since there is no guarantee that the investment will be profitable. But if it were profitable, the investor would be in a position to realize a greater returns than if he had invested a similar sum in an already established company (Campbell, 2012f).
- Zero-risk investments, such as a U.S. Treasury Security, have a low rate of return, while shares in a new-growth company have the potential to make an investor very wealthy, but also the potential to lose the investor's entire investment (Farlex Financial Dictionary, 2012g).

- Investment in higher-value wildlife carries more risk than zero-risk investments, but the opportunity for greater gains is also efferent.

Certain types of risk are easier to quantify than others. To the extent that risk is quantifiable, it is generally calculated as the standard deviation on an investment's average return. According to Ardehali *et al.,* (2005:491-519) methodologies for measuring risk and risk tolerance can be divided into the following categories:

- **Utility theory**: Risk premiums, determining the amount an investor is willing to concede for the Expected Monetary Value (EMV) in order to mitigate the risk.
- **Objective measures**: Determining how an investor really feels about taking risks in relation to new investments.
- **Heuristic judgment**: Analysis of the socioeconomic, demographic and attitudinal factors to help predetermine the investor's financial risk tolerance.
- **Subjective assessment**: Determining the perceptions of risk that guide the investor into taking financial risks and determining if the investor sees an investment as an opportunity for growth or potential loss.
- **Database description**: Questionnaire consisting of a number of psychological questions along with demographic variables to determine state of mind and risk taking tolerance. This will also be an imperative approach taken in the empirical study of this research.

This is a brief summary of investment risk and risk tolerance. A more detailed analysis will be discussed later in the text, specifically relating to higher-value wildlife whilst applying the methodology as set out by Ardehali *et al*., (2005:491).

3.5.9 Return

Return in relation to financial securities and investments is the amount of revenue an investment generates over a given period of time as a percentage of the amount of capital invested (Farlex Financial Dictionary, 2012f). Swart (2012:242) states that risk and return is positively correlated. In other words lower risk tolerance is associated with lower anticipated return on an investor's investment.

The rate of return shows the amount of time it will take to recoup one's investment. For example, if one were to invest R1,000.00 and receive R150.00 in the first year of the investment, the rate of return is 15%; the investor would recover his/her initial R1,000.00 in six years and eight months (Farlex Financial Dictionary, 2012f). Another example is if an investor bought a share that paid no dividends at R25,00 a share and sold it for R30,00 a share. The return would be R5,00 in respects to his investment. If you bought on January 3, and sold it the following January 4, that would be a 20% annual percentage return, or the R5,00 return divided by your R25,00 investment.

Return can be conveyed as a percentage calculated by adding the income and the change in value, and then dividing the initial principal or investment sum. The annualized return can be determined by dividing the percentage return by the number of years the investment has been accumulating interest (Campbell, 2012f). If the investor held the share for five years before selling for R30,00 a share, the investor's annualized return would be 4%, because the 20% gain is divided by five years rather than one year.

Different investors have different required rates of return at different levels of risk. This is determined by the companies through the calculation of weighted average cost of capital (WACC) in respects of capital outlays or investment (Correia *et al.*, 2011:7-2). The investors' return is the profit or loss on investments, including income and change in value (capital growth or negative growth).

Percentage return and annual percentage return allow investors to compare the return provided by different investments or investments held over different periods of time. Return calculated over multiple periods is simple when taking into account the investor's holding time. Bodie *et al.*, (2010:111-112) suggests that measurement of return can be determined statistically through three different methods namely:

- **Arithmetic averages:** Summation of the returns in each period divided by the number of terms or periods.
- **Geometric averages:** Single per-period return that gives the same cumulative results as the sequence of real returns.

- **Dollar-weight return:** Refers to the internal rate of return of a potential investment.

Measurements of return in respects of capital outlays for the purpose of investments will be discussed in detail later in the chapter.

The following table indicates the average annual return for the most common asset classes taking tax into account. The table represents return for 5 years to 20 years ending in 2009:

Table 3.5.9.1 Average annual return for the most common asset classes:

Asset class	5 years	20 years
Equity	21.8%	19.0%
Property unit trusts	21.3%	18.8%
Bonds	12.6%	18%
Own Mortgage	12.2%	16.2%
Gold	26.5%	12.6%
Money markets	7.5%	11.6%

Source: Botha *et al.*, (2010)

This table is a representative of average annual return for the above asset classes, simplified for up until the year 2010.

3.5.10 Amount

The "amount" refers to the amount of money the potential investor has available in order to take on the investment endeavour. The amount will determine which investments are feasible and which are not (Swart, 2012:242). The investment opportunities vary to a large degree, usually determined by the amount an investor is willing to invest. Smaller monthly investments can be invested in unit trust, but investments in listed shares require larger more substantial investment amounts (Swart, 2012:243).

3.5.11 Term of investment

Farlex Financial Dictionary (2012h) defines 'term of investment' as the length of time between when a fixed-income security, such as a bond or note, is offered for sale and the sale is also the maturity date. The Dictionary of Financial Terms (2008c) expands on this definition by stating that the term of investment is the period of time during which a fixed-income

security, investment, or agreement is in force. Swart (2012:242) states that the specific term of an investment is very important to every investment. If an investor needs his funds in a year's time, the investor should not consider a long term investment.

When the term of an investment ends, the issuer repays the par value of the security, often along with the final interest payment. The general rule is the longer the term, the higher the rate of interest the investment pays to offset the increased risk of tying up your money for a longer period of time (Campbell, 2012g). Examples of investment terms include a 20-year mortgage taken on a home, or bond with a redemption date.

3.5.12 Safety of Capital

According to Swart (2012:242) an investment must survive for as long as it pleases the investor. One example of "safety of capital" is if an investor was to invest R50,000 he would need some form of assurance that the money would be safe and that he would not receive less than the R50,000 invested after the term has elapsed (without taking into account that the investor will receive less in real terms when factoring in inflation adjustment and tax).

A substantial loss at a young age can be recouped, but at an older age a loss of capital might be catastrophic for retirement. This causes a decline in most investors' tolerance for risk. Over the average life span of an investor, older investors usually prefer less risky investments and would rather turn to investments where the safety of the capital is guaranteed (Swart, 2012:242).

3.5.13 Transaction costs

In accounting and other related disciplines, a transaction cost is a cost incurred in making an economic exchange (Dictionary of Economics, 1987:55-58; Farlex Financial Dictionary, 2012i). When buying or selling financial assets such as shares, investors pay a commission to their stockbroker and that commission is the liability or transaction cost of going through with the shares deal. The purchase of almost any asset entails transaction costs, and in some cases these transaction costs are paid for both the investment and the sale of the asset (Swart, 2012:243).

When one considers buying wildlife at an auction, the investors costs will not only entail the price of the purchased animal itself, but also the energy and effort required to find out which of the various wildlife species the investor prefers. This also entails which auctions to attend and at what price the animal should be purchased. Further costs include the cost of traveling from their home to the auction and back, the time waiting for the right "product" to fall under the hammer, and the effort of paying for the animal in itself. These are only some of the costs above and beyond the cost of the animal which can be included in the transaction costs.

Various industry specific transaction costs will be discussed in more detail in the following chapters. When rationally evaluating a potential transaction, it is important to consider transaction costs that might prove significant when considering making an investment (Campbell, 2012f).

Dahlman (1979:141-162) originally listed a number of types of transaction costs which later came to be known by specific names;

- **Search and information costs** are costs such as those incurred when determining if the required product is available on the market and which supplier sells this product at the lowest price, etc.
- **Bargaining costs** are costs required from investors to come to an acceptable agreement with the other party so as to complete the transaction and draw up an appropriate contract between these parties. In game theory this is analysed for instance in the game of chicken where each party tries to push the boundaries until the other party finally gives in. In asset markets and in market microstructure, the transaction cost can be described as the function of the distance between the bid and ask (Dahlman, 1979:141-162).
- **Policing and enforcement costs** are the costs of making sure the other party complies to the terms of the contract between them, and also taking the appropriate action (often through the legal system) if this turns out not to be the case. In the wildlife industry, this may pertain to the permits required to translocate and breed the animals in captivity.

3.5.14 Timing

Market timing according to the Dictionary of Financial Terms (2008a) relates to investors trying to anticipate the point at which a market has hit, or is about to hit, a high or low turning point, and this is usually based on historical patterns, technical analysis, as well as other factors.

Market timers are investors who try to buy as the market turns up and sell before the market turns down. It's the anticipated change in direction rather than the amount of time that passes between those changes that is of significance to these investors (Houghton Mifflin, 2003b). Investors try to buy low and sell high by taking advantage of second-to-second or minute-to-minute changes in the financial marketplace. They base decisions on information such as a forecast on interest rates or a sell-off in a particular market sector (Swart, 2012:243).

3.5.15 Diversification

Diversification is a method of risk management that mixes an extensive variety of investments within a portfolio where the act or strategy relates to adding more investments to one's portfolio to hedge against the investments already within the portfolio (Farlex Financial Dictionary, 2012e; Investopedia, 2013c). Campbell (2012e) states that diversification is the act of investing in different asset classes and securities (of many issuers), in an attempt to reduce overall investment risk and to avoid damaging a portfolio's performance by the poor performance of a single security, industry or country. The rationale behind this technique contends that a portfolio will, on average, yield higher returns and result in lower risk than any individual investment found within the portfolio (Investopedia, 2013c).

Ideally diversification of one’s portfolio will reduce the risk inherent in any one investment, and this increases the possibility of making a profit, or at least contributes to avoiding a loss. Portfolio diversification might also reduce the expected return on a portfolio, but it purely depends on the level and type of diversification (Campbell, 2012e). There are two primary methods of diversification (Fidelity, 2012).

- Horizontal diversification involves investing in similar type investments. Examples include investing in several technology companies, different types of bonds or in various species of wildlife (Mayo, 2008:324).

- Vertical diversification comprises of investing in dissimilar securities or assets; for example, one may choose to invest in securities traded in different countries, or in both winter clothing and swimsuit companies. Both types of diversification may be as narrow or broad as the investor chooses. In most cases the broader the diversification, the less risk and less return the investment will incur (Investopedia, 2013b).

Diversification strives to smooth out risk events that are unsystematic within a portfolio, so the positive performance of some chosen investments can neutralize the negative performance of ill-chosen investments. The benefits of diversification will therefore hold only if the securities in the portfolio are not perfectly correlated (Swart, 2012:243).

3.5.16 Control

Swart (2012:243) states that individual investors themselves have to decide the amount of control they want to exercise over the chosen investment and the degree of control investors' desire to exercise. These factors are usually dependant upon the personality type of the investor in question.

Financial assets such as shares or bonds can be controlled with relative ease since investors can electronically buy and sell whenever they see fit. Investment control can quite easily be delegated to a broker or financial advisor by an investor, whereas investors who choose to not take full control of their own investment can retain final say by way of permission (Swart, 2012:243).

3.5.17 Knowledge/management requirements

Certain investments require considerable skill, knowledge and time to properly manage the returns and outcomes of the investment. Very few investors have the required knowledge to take advantage of opportunities within the market and see satisfying returns without the help of a professional (Swart, 2012:242). Stockbrokers or other investment professionals can therefore be appointed to manage a client's investment portfolio, since they have the time, energy and knowledge to make appropriate decisions for investors.

It is worth mentioning that investors should thoroughly examine if they have the necessary comprehension and skill to achieve the required return. This is because of the various types of investment opportunities and asset classes, each with their own knowledge requirements,

Examples of knowledge intensive investment opportunities include:

- **Technology shares:** Due to the constantly changing environmental and social trends of technology shares, share-picking is heavily dependent on up-to-date current knowledge to achieve success.
- **Wildlife investment:** Considering livestock management, agricultural know-how and agricultural economic factors all have to be actively considered and managed by investors. Success is heavily dependent on the knowledge of the potential investors. Success can most likely also be achieved by the outsourcing of needed knowledge to trained professionals. Chapter 5 will comprehensively discuss the needed knowledge for such an investment.

3.5.18 Inflation

Investopedia (2013b) defines inflation as the rate at which the general level of prices for goods and services rise in respect to the previous year, and subsequently, how purchasing power declines due to an increase in inflation. Government central banks around the world attempt to stop severe inflation and deflation, in an attempt to keep the extreme growth of prices to a minimum. Central banks attempt to control inflation by raising interest rates when necessary, which in turn decreases the amount of money in circulation.

The Farlex Financial Dictionary (2012c) further stated that inflation is the reduction in the purchasing power of a currency or money. Inflation has historically been catalysed when a country's supply of money increased due to printing of too much of its currency, in too short a period of time.

Swart (2008:244) states that inflation is inevitable whenever wealth is created, but central banks attempt to keep it between 2% and 3% whenever possible internationally. Locally the South African government set inflation targets on 25 February 2009 at between 3% to 6% per year (South African Reserve Bank, 2009).

According to The Dictionary of Financial Terms (2008) inflation can be classified within the following categories:

- **Moderate inflation**: Moderate inflation is typically accompanied by economic growth of a country. The South African Reserve Bank and central banks in other nations try to keep inflation in check by decreasing the money supply, making it more difficult to borrow and thus slowing expansion or economic growth (Hallman & Rosenbloom, 2009:50).
- **Hyperinflation:** Hyperinflation typically happens when prices rise by 100% or more annually, as was the case of Zimbabwe. Hyperinflation can destroy the economic (and sometimes political) stability of a country by driving the price of necessities higher than people can afford (Brown & Reilly, 2009:50).
- **Deflation:** Deflation, in contrast, is a widespread decline in prices that also has the potential to undermine the economy by stifling production and increasing unemployment (Hallman & Rosenbloom, 2009:47).
- **Stagflation:** Stagflation results when inflation increases significantly despite a slowdown in the economy and shrinking demand for products and services that results from rising unemployment and low consumer confidence (Hallman & Rosenbloom, 2009:51).

Protection against inflation is of utmost importance to any investor, as the risk of inflation holds the potential to dramatically deplete an investment portfolio which could in turn pose a real

threat (Botha *et al.*, 2010:386). Swart (2012:244) continues to say that pre-tax returns should be higher than that of inflation and that investment seldom offers real positive returns after-tax.

According to Swart (2012:244) inflation protection is the ability of an investment to retain the buying power for the investor in the future. As stated earlier, inflation targets for South Africa is between 3% and 6% per annum (South African Reserve Bank, 2009), therefore implying that an investment has to outperform inflation by the equivalent inflation per year. Inflation at a higher rate than the investment's return will result in a steady erosion of an investor's created wealth. If the growth does not equate to an amount higher than inflation, the investor will in real terms reduce his buying power over the long run (Botha *et al.*, 2010:286; Swart, 2012:244).

According to Hallman & Rosenbloom (2009:51) inflation hedging can be accomplished through asset allocation planning. Investors typically hedge against inflation by investing in commodities such as gold and other physical non-monetary asset classes such as property. This trend in inflation hedging can be attributed to the belief that cost increases will have a knock-on effect on the prices of these assets.

It can finally be concluded that it is imperative for long-term investors to ensure that their portfolio is appropriately structured to accommodate the impact of inflation on the real value of their investments.

3.6 INVESTMENT ALTERNATIVE SELECTION

The decision making process for investments are affected by numerous critical factors. Many of these factors cannot be quantified or reduced to simple common units. The following steps set out by Oakford (2007) are aimed at simplifying the decision making process relating to capital investment decisions. These steps will be discussed and explained in the following sub-sections.

3.6.1 Identification of Alternatives

When an individual is faced with decisions regarding various options relating to investment opportunities, the investor should identify the possible alternative future actions. Implied within this step is the assumption that a responsible person will recognize the existence of possible choices. Alas in business and in personal finance all the unknown factors are seldom fully comprehended and regret relating to a better course of action is common (CIMA, 2012:360). For example a hypothetical decision maker has set aside an amount of R1,000,000 with the purpose of making an investment. He has identified the following investment opportunities:

- Equity bonds in Groceries Inc., a listed company trading at R2.00 a share.
- Residential property in Johannesburg with an estimate of R4,500.00 in potential monthly income from rent.

3.6.2 Monetary Consequences of Alternatives

The second step is aimed at establishing the relevant future monetary consequences attributed to each alternative investment opportunity (Harris & Raviv, 1996:6; Oakford, 2007:2). There exists various capital rationing and investment appraisal techniques to appropriately calculate the monetary consequences of investment alternatives which will be discussed in detail later in this text. Whilst return and income is paramount to the ultimate success pertaining to an investment other factors need to be carefully considered.

When considered in the hypothetical case of an investor:

Residential property has more running and hidden costs attributed to it in comparison to an equity investment in a public company. These costs direct or indirect (in the case of renting) all have a substantial long-term effect on the performance of an investment. Hidden costs associated with property management need to be taken into account when the investor considers an investment in property.

The following are examples of possible hidden costs:

- Transfer duties to SARS.

- Attorney fees for the deeds office transfer.
- Bond registration costs.
- Home Insurance.
- Levies.
- Costs of connecting electricity, TV, ADSL.
- General maintenance to the property.

Pure equity investment such as what the hypothetical investor is considering usually only has a transaction fee and administration which is relevant.

3.6.3 Non-monetary Consequences

When choosing between investment-alternatives there will always be an element of regret relating to investors' choices. Opportunity costs forgone and hindsight perspective on revenue and expenses are difficult to quantify and incorporate when making an investment decision (Harris & Raviv, 1996:4).

Planning for unknown circumstances and varying characteristics of different investments are crucial when considering investments. An investment in any endeavour has various factors to consider: whilst the monetary considerations are of paramount importance, non-financial factors in many cases sway investment decisions.

These decisions mainly hinge on personal taste and perceptions of the investors. This can be attributed to how investors differ in the reasonable weight of non-monetary factors. Careful consideration should be applied when evaluating the effect of non-monetary factors on investment decisions (Oakford, 2007:4). Non-financial considerations shall be discussed in more detail later in the chapter.

The hypothetical investor considers the effects of the two possible investments and how they will relate to his needs. Many non-financial considerations need to be taken into account in the two hypothetical situations. Brief non-financial considerations relating to the investor's decision making process are as follow:

Considering geographical location, time and attention that an investment needs is an important factor when considering an investment in for example property. A physical property investment in comparison to equity investment has different characteristics that could impact the investor. If the investor chooses to invest in property there will be additional time and attention needed to take care of the property since maintenance will still be his responsibility. An equity investment is usually considered a more passive investment when considering that the investor has no management responsibility at Groceries Inc. (Bodie *et al.*, 2010:156). If the investor does not reside in the general vicinity of the proposed property he will have to travel to inspect his investment and there is a time lag to his response time in case of emergency. Equity in relation can be easily accessed by simply browsing the internet, resulting in less time and attention needed and the investor is also not hindered by geographical limitations.

3.6.4 Cash Flow Dispersed in Time

When considering an investment, the flow of possible available funds greatly affects the potential of return and appropriateness of the investment. The availability of monthly or yearly funds to meet needed capital expenditure or repayment requirements is of tantamount importance (Oakford, 2007:5).

Considering the hypothetical investor will have to apply for a loan to fund the investment of R1,000,000 at his bank, the investor is offered two options from the bank relating to the repayment of such a loan. The first (Plan A) requires that the investor repays R1,127,000 one year from the date of the loan. Plan B entails the investor to repay a monthly amount of R90,260 for 12 months. The cash flows from the stand point of the investor is Plan A and Plan B with the differences (Plan A – Plan B) tabulated below.

The following sign conversion will be adopted throughout this text. A positive (+) illustrates a receipt of cash flow or when a disbursement is avoided. A negative (-) cash flow illustrates diminished positive position of a decision maker due to expenses or repayment.

Table 3.6.4.1 Cash Flow Dispersion: Hypothetical investor's cash flows in Rands:

Months (n)	Plan A	Plan B	A – B
1.	0	-90,260.00	+90,260.00
2.	0	-90,260.00	+90,260.00
3.	0	-90,260.00	+90,260.00
4.	0	-90,260.00	+90,260.00
5.	0	-90,260.00	+90,260.00
6.	0	-90,260.00	+90,260.00
7.	0	-90,260.00	+90,260.00
8.	0	-90,260.00	+90,260.00
9.	0	-90,260.00	+90,260.00
10.	0	-90,260.00	+90,260.00
11.	0	-90,260.00	+90,260.00
12.	-1,127,000.00	-90,260.00	-1,036,740.00

Although the non-monetary consequences of the two repayment plans are identical the investor cannot conclude from the cash flows which of the two plans are more economically attractive. The data pertinent to his choice is summarized by the differences between the alternatives (Plan A - Plan B). If the investor were to choose Plan A he would have an additional R90,260.00 of his disposable income per month for eleven months, but will retroactively have to pay R1,036,740.00 at the end of the twelfth month. Thus the investor needs to consider the time value of money within his decision.

3.6.5 Uncertainty in Decision Making

Decisions are usually based on estimates of possible or definite future events. There always exists elements of uncertainty about the accuracy of the estimates the investor based his decisions on. The importance is not determined upon the realization of the exact estimate, but rather on whether or not an error in calculation due to changing or incorrect information leads to the selection or wrong investment alternative (CIMA, 2012:365; Oakford, 2007:6).

The hypothetical investor's investment decision will be greatly affected if he wrongly estimated the precise timing and amounts of the cash flows for the loan repayment. Furthermore

unforeseen changes within the economy or tax system will have far reaching effect on the performance of his investment. An increase in capital gains tax will in effect increase his tax liability in the future and needs to be taken into consideration when choosing among the alternatives (Swart, 2012:112).

Investment decisions are choices among alternative actions. Investors should identify the possible alternative future action and estimate the benefits and the costs relevant to each alternative option, when faced with such a choice. Investors should ultimately give weight to both non-monetary and monetary considerations and make a decision that is preferable to the investor (McRae, 1997:9).

3.7 RISK AND RETURN

3.7.1 Introduction to Risk and Return

Each investor has his own internal goals in respects of the return on an investment, be it continuous return such as interest, dividends or end of period capital growth. As with all investments there is a probability that the investment will not produce the desired income or return the investor initially expected. This risk of not receiving the income expected initially is attached to all investment classes and types, financial or real investment options (Erasmus *et al.*, 2003:98). Chapter four will detail the investment options open to investors.

In finance and economic theory there is an assumption that a rational person will thoroughly investigate any potential investment opportunity before he invests his hard earned money. Two of the most imperative factors investors have to reflect upon when considering an investment is the expected return and the risk such an investment entails (Erasmus *et al.*, 2003:81). Rational investors investigate each aspect of a potential investment as they would normally consider the highest possible return at the lowest possible risk exposure.

Investopedia (2013e) and Correia *et al.*, (2011:3-8) state that there exists an inherent trade-off among risk and return. The principle is that potential return rises with an increase in risk that the investor is willing to absorb. Low levels of uncertainty (low-risk) or lower risk tolerance from the investors are associated with low potential returns on investment, whereas high levels of uncertainty (high-risk) are associated with high potential returns. When risk and return are

thoroughly investigated, a positive correlation is usually found in financial analysis and financial return calculation (Erasmus *et al.*, 2003:81). This positive relationship can be attributed to the core concept in finance theory that states that the higher the expected return offered by an investment, the higher the risk exposure will be associated with such investment (Farlex Financial Dictionary, 2012g). Investopedia (2013e) continues to state that the risk-return trade-off can render higher profits from invested money only if it is subject to the possibility of being lost.

The following subsection will focus on the calculation of return and expected return quantification and the qualitative aspects of risks associated with investment.

3.7.2 Return

Erasmus *et al.*, (2003:81) states that return of an investment represents the expected benefit that investors will receive from their investment. As previously stated in the subsection of criteria, return relates to the amount of revenue an investment generates over a given time period and is expressed as a percentage amount of capital invested (Farlex Financial Dictionary, 2012f). Where return indicates the actual quantification of the investment performance, expected return relates to the investor's objectives and goals for an investment beforehand.

Expected return is defined by Investopedia (2012a) as the amount on investors would anticipate receiving on an investment that has various known or expected rates of return. To a certain degree expected return equals risk-free rate (generally the prevailing U.S. Treasury note or bond rate) plus a risk premium (the difference between the historic market return and or other factors such as inflation adjustment) in corporate finance, which is then multiplied by the asset's beta using the capital asset pricing model (CAPM) method.

The conditional expected return varies through time as a function of current available market information (Campbell, 2012b). It is important to note, however, that the expected return is usually based on historical data and is not a guaranteed fact (Farlex Financial Dictionary, 2012b).

An example of this would be if an investor invested in an equity share that had a 50% chance of producing a 10% profit and a 50% chance of producing a 5% loss, the expected return would be 2.5% (0.5 * 0.1 + 0.5 * -0.05).

For the most part, the expected return is a tool used to determine whether or not an investment has a positive or negative average net outcome. It is not a concrete and definite figure of profit and loss. Considering the example above, the 2.5% expected return cannot, in fact, be realized as it is merely an average (Guinan, 2009b; Investopedia, 2012a).

Hurdle rate refers to the minimum rate of return on a project or investment required by a manager or investor. This is in order to compensate for risk: the riskier the project, the higher the hurdle rate (Investopedia, 2013d). Within capital budgeting or investment appraisal, projects are gauged by discounting future cash flows to the present by applying the hurdle rate. This is done through ascertaining the net present value of the project, or by computing the internal rate of return (IRR) on the project and comparing this to the hurdle rate. If the IRR exceeds the hurdle rate, the project would most likely be accepted.

For example, if a hypothetical investor's Wildlife Ranching Company were to have a hurdle rate of 10% for acceptable projects, his project would most likely be accepted if it had an internal rate of return of 14% and it did not have a significantly higher degree of risk. Alternately, discounting the future cash flows of this project by the hurdle rate of 10% would lead to a large and positive net present value, which would also lead to the project's acceptance.

In addition to the calculation of expected return or hurdle rate, intelligent and wise investors should also consider the probability of return to appropriately assess risk associated with the investment. Investors can find instances in which certain games of chance offer a positive expected return, despite the very low likelihood of realizing that return which is stated (Guinan, 2009a).

As stated previously return in relation to financial securities and investment is the amount of revenue an investment generates over a given period of time as a percentage of the amount of capital invested (Farlex Financial Dictionary, 2012f). Considering that Swart (2012:242)

states that risk and return is positively correlated, lower risk tolerance can be associated with lower anticipated return of an investor's investment.

Different investors have different required rates of return at different levels of risk and this is determined by companies in the calculation of Weighted Average Cost of Capital (WACC) in respects of capital outlays or investment (Correia *et al.*, 2011:3-3). Investor's return is the profit or loss you have on your investments, including income and change in value (capital growth or negative growth).

An investor's required return or hurdle rate can be calculated in various ways: the following are the two most important methods pertaining to investors, namely the Capital Asset Pricing Model (CAPM) and WACC. Both methods extrapolate from financial management principles to help investors determine the cost of financing a new endeavour and thus establish an appropriate minimum expected return. Investment for companies and individuals are based on the same principles, therefore the techniques and methods in both financial management and personal investments are relevant to both since they are almost indistinguishable in nature. These methods will be discussed in detail in the following chapter in the calculation of an appropriate discount rate.

Investors' expected return is based upon their own assumptions, needs and their willingness to assume risk (Swart, 2012:244). When investors choose rate that complies with their own investment objectives they can adjust by taking risk into consideration, always keeping in mind that an appropriate return should beat inflation. The end result should be determining a minimum hurdle or required rate to gauge investment performance and an expected return on investment.

3.7.3 Risk

Farlex Financial Dictionary (2012g) defines risk as the uncertainty associated with any investment, albeit financial or non-monetary. Risk is the possibility that the actual return on an investment will negatively vary from the expected return the investor had in mind or planned on receiving. A vitally important concept in finance is the idea that an investment that carries

an inherent higher risk has the potential of a higher return on investment in comparison to lower safer investments.

Risk entails that investors have the possibility of losing some, or even all, of their original capital investment. Low levels of uncertainty (low risk) are associated with low potential returns on capital invested. High levels of uncertainty (high risk) are associated with high potential returns on investment. The risk/return trade-off is the balance between the desire for the lowest possible risk and the highest possible return (Lamb, 2010a). Campbell (2012f) states that risk is often defined as the standard deviation of the return on the total investment and refers to the degree of uncertainty of return on an asset.

Investment risks can be divided into two categories: systematic and unsystematic.

- **Systematic Risk –** impacts a large number of asset classes and underlies all other investment risks. Systemic risk may apply to a certain country or industry, or to the entire global economy (Lamb, 2010a). Systemic risk is also called “un-diversifiable risk” or "market risk" as it relates to uncertainty inherent to the entire market or entire market segment. A significant political event, for example, could affect several of the assets in your portfolio. It is virtually impossible to protect yourself against this type of risk. It is impossible to reduce systemic risk for the global economy (considering the possibility of complete global shutdown is theoretically possible), but one may mitigate other forms of systemic risk by buying different kinds of securities and/or by buying in different industries (Farlex Financial Dictionary, 2012g; Investopedia, 2013g). Another example: oil companies have the systemic risk that they will drill up all the oil in the world; an investor may mitigate this risk by investing in both oil companies and companies having nothing to do with oil.

- **Unsystematic Risk –** is sometimes referred to as "specific risk". This kind of risk affects a very small number of assets (Lamb, 2010a). This is also known as company or industry specific risk that is inherent in each investment. The amount of unsystematic risk can be reduced through appropriate diversification (Houghton Mifflin, 2003a). These risks are usually unique to a certain asset and company. An example of unsystematic risk is the possibility of poor earnings or a strike amongst a company's

employees. One may mitigate unsystematic risk by buying different securities in the same industry and/or by buying in different industries. For example, a particular oil company has the diversifiable risk that it may drill little or no oil in a given year. An investor may mitigate this risk by investing in several different oil companies as well as in companies having nothing to do with oil. Diversification is the only way to protect investors from unsystematic risk (Investopedia, 2013f).

Now that the fundamental types of risk have been determined, let's look at more specific types of risk, particularly when talking about shares and bonds.

- **Interest Rate Risk –** Interest rate risk is the possibility that changes in the interest rate may have a negative knock-on affect on the return of an investment, and is also applicable where fixed-rate debt instrument will decline in value as a result of a rise in interest rates (Erasmus *et al.*, 2003:84). There exists according to Erasmus *et al.*, (2003:84) an inverse relationship among investment opportunities and interest rates. Whenever investors buy securities that offer a fixed rate of return, they are exposing themselves to interest rate risk. This is true for bonds and also for preferred shares.

  Furthermore, investors should understand the various factors that influence interest rates, so that you can learn to anticipate their movements and adjust their investments accordingly (Lamb, 2010b).

- ***Business Risk* –** Business risk is the measure of risk associated with a particular investment. It is also known as unsystematic risk, as stated previously it refers to the risk associated with a specific issuer of a security or investment (Lamb, 2010b). Farlex Financial Dictionary (2012a) defines business risk as the risk that a company will go bankrupt. Every company carries or has a determinable amount of business risk; this risk is that it will produce insufficient cash flow in order to maintain operations. Business risk can come from a variety of sources within the company, some systemic and others un-systemic. As stated every company has the business risk that the broader economy will perform poorly and therefore that sales will be poor, and also the risk that the market simply will not like its products (Bolton *et al.*, 2013:40). Generally speaking, all businesses in the same industry have similar types of business

risk. But used more specifically, business risk refers to the possibility that the issuer of a bond or share may go bankrupt or would be unable to pay the interest or principal in the case of bonds. A common way to avoid unsystematic risk is to diversify ones investments - that is, to buy mutual funds, which hold the securities of many different companies (Lamb, 2010b).

- ***Credit Risk*** – Campbell (2012a) states that credit risk is a type of risk that an issuer of debt securities or a borrower may evade or default on its obligations, or where the payment may not be made on a negotiable instrument. Lamb (2010) continues to state that credit risk refers to the possibility that a particular bond issuer will not be able to make expected interest rate payments and/or principal repayment. Typically, the higher the credit risk, the higher the interest rate on the bond.

- ***Taxability Risk*** – This applies to investments such as municipal bond offerings, and refers to the risk that a security that was issued with tax-exempt or tax advantageous status could potentially lose that status prior to maturity (Lamb, 2010b). Since municipal bonds carry a lower interest rate than fully taxable bonds, the bond holders would end up with a lower after-tax yield than originally planned.

- ***Call Risk*** – Lamb (2010) states that call risk is specific to bond issues and refers to the possibility that a debt security or investment will be called prior to maturity. Call risk usually goes hand in hand with reinvestment risk that is discussed below, because the investor must find an investment that provides the same level of income for the equal risk that is taken. Call risk is most prevalent when interest rates are falling, as companies trying to save money the company will usually redeem bond issues with higher coupons and replace them on the bond market with issues with lower interest rates. In a declining interest rate environment, the investor is usually forced to take on more risk in order to replace the same income stream (Lamb, 2010b).

- ***Inflationary Risk*** – Erasmus *et al.*, (2003:86) describes inflation risk as where the time value of money decreases constantly over time. Inflationary risk also known as purchasing power risk, is the chance that the value of an asset or income generated by it will be eroded as inflation decreases the value of a country's currency (Fabozzi,

2005:26; Lamb, 2010b). Simply put another way, it is the risk that future inflation will cause the purchasing power of cash flow from an investment to decline. The best way to fight this type of risk is through appreciable investments, such as shares or convertible bonds, which have a growth component that stays ahead of inflation over the long term.

- ***Liquidity Risk*** – Lamb (2010) refers to liquidity risk as the possibility that an investor may not be able to buy or sell an investment (as he so chooses) as and when desired, or in sufficient quantities, because market opportunities are limited and do not supply the investor with the chance to sell adequately (Swart, 2012:242). A good example of liquidity risk is when considering selling real estate. In most cases, it will be more difficult to sell a property at any given moment (or as the need arises) because of the need of financing approval and so on, unlike government securities or blue chip shares (Fabozzi, 2005:26).

- ***Market Risk*** – Rational investors will normally attempt to value an investment and determine its outcome and intrinsic value before investing in the asset. Comparing the intrinsic value and the market price, investors can determine whether an investment is over or under valued (Erasmus *et al.,* 2003:88). Market risk also referred to as systematic risk, is a risk that will affect all investments in the same manner (Fabozzi, 2005:24; Lamb, 2010b). Erasmus *et al.,* (2003:88) states that market risk is the probability that the market price of the underlying investment will differ in its intrinsic calculated value because of irrational behaviour from other investors. In other words, market risk is an investment caused by certain factors that cannot be controlled or mitigated by diversification of investments. This is an important attribute to consider when investment professionals are recommending mutual funds to potential investors, because mutual funds are usually a quick way to diversify their portfolio (Lamb, 2010b).

- ***Reinvestment Risk*** – Investopedia (2011b) defines reinvestment risk as the risk that future coupons from a bond will not be reinvested at the same prevailing interest rate as when the bond was initially purchased (Fabozzi, 2005:22). In a declining interest rate environment, investors who have bonds coming due, being called, face the difficult task

of investing the proceeds in bond issues with equal or greater interest rates than the redeemed bonds. As a result, they are often forced to purchase securities that do not provide the same level of income, unless they take on more credit or market risk and buy bonds with lower credit ratings (Lamb, 2010b). This situation is known as reinvestment risk: it is the risk that falling interest rates from an asset will lead to a decline in cash flow for the investor when its principal and interest payments are reinvested at lower rates than previously thought (Fabozzi, 2005:1495).

- ***Social and Political Risk*** – Political risk is associated with the possibility of nationalization, unfavourable government actions or social changes resulting in a loss of value (Fabozzi, 2005:28). Thus Political risk is the risk that an investment's returns could be negatively affected as a result of political changes or instability in a country (Lamb, 2010b). Instability affecting investment returns could stem from a change in government, legislative bodies, other foreign policy makers, or military control. Because the South African Government has the power to change laws affecting investments, any ruling that results in adverse consequences is also known as legislative risk to investors (Casson & Da Silva, 2013:375).

- ***Currency/Exchange Rate Risk -*** Currency or exchange rate risk is the uncertainty relating to an investment regarding the returns for investors that are exposed to foreign securities (Erasmus *et al.*, 2003:87). For example a South African investor who purchases U.S Treasury securities will receive coupon payment, final redemption and principle in the form of dollars. Therefore, if the Rand/Dollar exchange is weaker than it was when he originally invested he will see erosion of his investment. Lamb (2010) says it is a form of risk that arises from the change in price of one currency against another. The constant fluctuations in the foreign currency in which an investment is denominated vis-à-vis one's home currency may add risk to the value of a security

  Understandably, currency risk is greater for shorter term investments, which do not have time to level off like longer term foreign investments.

3.8 CONCLUSION

It is important to note how the nature of an investment can effect new potential investments such as an investment in higher-value wildlife. In order to understand and fully comprehend such an investment, investors have to consider various factors that can affect their investments. Investors have to critically look at the investment criteria for the investment and all the factors that will affect the performance and return relating to their investment. The following chapter will detail the various popular and some obscure investment options investors have available. This ultimately will enable the research to contextualize and benchmark high-value wildlife investment against traditional investments.

CHAPTER 4: INVESTMENT OPTIONS AND INVESTMENT ANALYSIS

4.1 INTRODUCTION

In the previous chapter an in-depth discussion on the nature of investment was provided, including a discussion of the investment process and methods that enable investors to choose among investment alternatives. Chapter four elaborates by reporting on the different investment options or alternatives that are available to investors. This creates a holistic contextual picture of high-value wildlife investing within the larger spectrum of investment options. The same methodology is followed as in the previous chapter, relating to two primary investment options, namely monetary or financial investments and non-monetary or real investment options. The mainstay of this chapter will focus on various investment instruments available to investors and widely accepted investment appraisal techniques. The analysis techniques discussed, with specific reference to return on investment (ROI), are included in this chapter. The reason for this specific reference to ROI is that the preliminary research indicated that this method is the most wildly used investment appraisal technique utilized in the high-value wildlife investment industry. Other analysis methods are also discussed to establish whether they are relevant and appropriate for analysing high-value wildlife investment opportunities. The theoretical discussion based on advantages and disadvantages of analysis methods provides the ability to benchmark and potentially suggest the most appropriate analysis techniques for evaluating an investment in high-value wildlife.

4.2 ASSET ALLOCATION

Asset allocation, as defined by Brown and Reilly (2009:31), is the process of deciding how to distribute an investor's wealth among various asset classes and countries in order to minimize the risk to the investor's portfolio and reach the applicable required return as stated in his investment policy. Asset allocation and diversification are inseparable concepts in investment studies and according to Cavezzali and Rigoni (2012:137) it is advisable for all investors to

seek professional help in devising an appropriate asset allocation strategy if investors themselves do not have the necessary knowledge and skills.

Historically common shares outperform most financial and other investment instruments over a given time period (Bodie *et al.*, 2010:130; Investopedia, 2013e). It is advisable that investors generally include shares in a portfolio because shares are seldom beaten by most other investments over a longer period of time. Investors who are limited by the amount of time that can be allocated to an investment should diversify their portfolios by including investments other than shares. It is worth mentioning that diversification is advisable for any investor or portfolio because of the risk spread advantage (Bodie *et al.*, 2010:131; Maginn *et al.*, 2007:4).

As stated previously, asset allocation is an investment portfolio technique that aims to balance risk and create diversification within a portfolio by dividing assets among major asset classes and countries. These assets can include; bonds, shares, real estate, cash and collectables or any other investment the investor perceives as applicable (Investopedia, 2013c). Asset classes vary greatly in the levels of return and risk of each investment, each investment behaves differently over time of the investment. This intrinsic difference in each asset class causes some investments to increase in value and others to decrease, or not increase equitably (Brown & Reilly, 2009:31).

The fundamental justification of asset allocation is that the older an individual becomes, the less risk the investor should take on (Maginn *et al.*, 2007:2). Therefore the notion of asset allocation states that different asset classes offer returns that are not perfectly correlated with each other, hence diversification diminishes the overall risk in terms of the inconsistency of returns for a given level of expected return (Guinan, 2009b; Investopedia, 2013c; Lightbulb Press, 2008). This fundamental justification is emphasized after investors retire, the reason being that they may have to depend on their investments as their only source of income during this stage in their lives. The principle that investors should invest more conservatively is vital at this time because asset preservation could mean a sustainable income over a longer period of time (Cavezzali & Rigoni, 2012:137; Investopedia, 2013c).

Guinan (2009a) states that there is no simple formula to determine the appropriate portfolio asset allocation for every investor, and he continues to state that appropriate asset allocation is

seen as one of the most important factors contributing to success of the portfolio among investment professionals (Maginn *et al.*, 2007:2). Determining the appropriate mix of investments in an investor's portfolio cannot be over-emphasized. This is usually not an easy process, but it is primarily driven by the investor's investment policy and the investor's risk acceptance tolerance (Cavezzali & Rigoni, 2012:137; Investopedia, 2013c). The following subsections will discuss the various options available to investors so as to diversify their portfolio in order to choose appropriate investments.

4.3 MONETARY OR FINANCIAL INVESTMENT OPTIONS

Investors have various investment options to choose from; the most popular of traditional investment classes are financial investments. Swart (2012:244) states that financial investments can be divided into two primary categories, known as money market and capital market. Zucchi (2013) elaborates on this by stating that a financial market is a market that brings sellers and the buyers within the market together to trade in financial assets such as bonds, shares, commodities, currencies and derivatives. The purpose of a financial market according to Zucchi (2013) is to set prices for global trade, raise capital for companies and governments, and also transfer liquidity and risk. Although there are many components to a financial market, two of the most commonly used components are capital markets and money markets. Bodie *et al.*, (2010:23) continues to divide financial investments further into the following different markets and categories:

- The money market.
- The capital market.
- The bond market.
- The derivative market.
- Collective investments or Unit trusts.

In most of the literature studied for this section, the bond market and the derivative market were grouped together and encapsulated within the broader capital market. The following discussion of various financial markets and financial investments is done for the sake of completeness, performance benchmarking and comparative overview of higher-value wildlife

later in this dissertation. Financial instruments are important because of its popularity among investors and because sharess and bonds are the touchstone of all other instruments.

4.3.1 The Money Market

The money market is considered to be a subsector of the debt market and it usually comprises of very short-term, highly liquid and relatively lower-risk debt securities (Bodie *et al.*, 2010:24). Botha *et al.*, (2010:390) continues to state that the money market usually refers to a short-term investment and it does not have a maturity period of longer than three years, whereas capital markets have a maturity period after three to 20 years (Whitfield, 2011:10). There is a large number of financial instruments that have specifically been created for the purposes of short-term lending and borrowing. Many money market instruments are moderately specialized and these instruments are typically only traded by those investors with intimate knowledge of the money market, such as banks and large financial institutions (Livingston, 2003:26; Van Bergen, 2010).

Participants within the money market consist of financial institutions and merchants in money or credit who wish to either borrow or lend needed funds. Participants borrow and lend for short periods of time, typically up to thirteen months. As stated money market trades in short-term financial instruments are generally called “papers” (Loth, 2010; Van Bergen, 2010).

The fundamental core of the money market is that it consists of interbank lending; banks lend to each other using commercial paper, repurchase agreements and other similar instruments. These money market instruments are often benchmarked to (i.e. priced by reference to) the London Interbank Offered Rate (LIBOR) for the appropriate term and currency relating to the security (Loth, 2010; Van Bergen, 2010).

Swart (2010:244) and Bodie *et al.*, (2010:24) list the following as important money market instruments; this list is by no means complete but does indicate the most traded money market instruments.

- ***Bank acceptance:*** Most traded security in the money market. Banks accept the bill of exchange issued by a company for borrowings made, in which it promises to repay a stated sum after a stated period (Livingston, 2003:80).
- ***Certificate of deposit (CD):*** Time deposit most commonly offered to consumers by banks, thrift institutions and credit unions. CD's indicate capital plus interest will be paid on the stated date to the holder of the CD.
- ***Repurchase agreements:*** Short term loans normally for less than two weeks and frequently for one day, usually arranged by selling securities to an investor with an agreement to repurchase them at a fixed price on a fixed date (Livingston, 2003:74).
- ***Commercial paper:*** Short term promissory notes issued by a company at discount to face value and redeemed at face value. It is an unsecured, short-term loan issued by a corporation (Livingston, 2003:76).
- ***Treasury bills:*** Short term debt obligations of a national government that are issued to mature in three to twelve months.
- ***Money funds:*** Pooled short maturity, high quality investments which buy money market securities on behalf of retail or institutional investors.
- ***Foreign Exchange Swaps:*** Exchanging a set of currencies in spot date and the reversal of the exchange of currencies at a predetermined time in the future.

When investors start to formulate a portfolio of financial securities and instruments, the investor typically allocates a certain percentage of funds towards the safest and most liquid vehicle available: cash (Swart, 2012:244; Whitfield, 2011:10). Investors can leave these cash elements untouched, purely in liquid funds, within their investment account just as it would if deposited into a bank savings or checking account. However, investors are much better off placing the cash component of their portfolios into the money market, which offers interest income while still retaining the safety and liquidity of cash (Loth, 2010).

4.3.2 The Capital Market

When money markets are used for a short-term funding, they are usually applied to assets up to one year. Conversely, capital markets are used for longer-term funding of assets, and these assets relate to investments with maturity greater than one year (Zucchi, 2013). Swart (2012:247) states that the capital market offers investors the opportunity to invest their hard-

earned savings over a longer period. Together the capital markets and the money market comprise the lion-share of the financial market and are often used together to manage liquidity and risks for individuals, companies and governments (Correia *et al.*, 2011:1-18; Zucchi, 2013).

Zucchi (2013) states that the capital markets are the most widely followed markets in the world. The bond and share market are closely followed by professionals, institutional investors and individuals. The daily movements and performances are analysed as proxies for the overall economic condition both locally and for international markets.

The institutions operating within the capital markets make use of the capital market to raise capital for long-term purposes, such as for an acquisition or merger, to develop a line within the business or enter into a new business, and for other capital intensive projects (Correia *et al.*, 2011:13-2). Entities that raise funds for these longer-term purposes find funding by accessing one or more capital markets. In the bond market, companies or governments may issue debt in the form of corporate bonds or government bonds (Botha *et al.*, 2010:397). Similarly, companies may decide to raise money by issuing equities on the share market. Governmental entities are typically not held publicly but there are exceptions such as Eskom and Telkom. For this reason, governmental entities do not usually issue equities except in cases such as stated above. Companies and government entities that issue equity or debt are considered the sellers in these markets (Botha *et al.*, 2010:397; Zucchi, 2013).

The buyers, or the investors of these instruments, buy the shares or bonds of the sellers and trade them as they see fit. If the seller of these instruments, or issuer, places the securities on the market for the first time, then the market is known as the primary market (Botha *et al.*, 2010:397; Correia *et al.*, 2011:13-2). Conversely, if the securities have already been issued by the seller and are now being traded among buyers available for purchase, this is done on the secondary market. Sellers of financial instruments make money off the sale in the primary market, not in the secondary market, although the sellers do have a stake in the outcome (pricing) of their securities in the secondary market (Correia *et al.*, 2011:13-2).

As stated previously buyers of securities in the capital market tend to use funds that are targeted for longer-term investment. Capital markets are more risky markets in comparison to money

market and are not usually used to invest short-term funds. Many investors access the capital markets to save for retirement or education as they have higher returns. This usually means they are younger and are less risk adverse (Botha *et al.*, 2010:397).

Bodie *et al.*, (2010:36), Swart (2012:247) and Brown and Reilly (2009:73) list various different capital market instruments. The following is a brief discussion of the different markets encapsulated within capital markets. Additionally, examples of financial instruments within each market are also included and are seen as the most popular financial instrument within the capital market.

4.3.2.1 The Equity market

Some of the most commonly utilized investments in the capital markets are equity instruments, the two most prominent instruments are:

- ***Common Shares:*** Shares that represent ownership of a firm, as such the investor is entitled to a share of the profits called "dividends" (Brown & Reilly, 2009:72).
- ***Preference Shares:*** Classified as a fixed-income security and does not represent ownership, payments or income is stipulated by either a coupon rate or set repayment amount (Brown & Reilly, 2009:73; Fabozzi, 2005:15).

Investopedia (2013c) states that preferred stockholders have a greater claim to a company's assets and earnings, although Swart (2012:247) contrarily states that preference shares receive a lower on average return in comparison to ordinary or common shares. According to Swart (2012:247) this can mainly be attributed to lower risk due to the fixed obligation that is payable to the holder of the share. Although it is important to consider the performance and profits of the company, when comparing preference shares (fixed-bearing security) to ordinary shares they can receive profit share (Livingston, 2003:239). During times of good financial performance the company has excess cash available, and the company can decide to distribute money to the investors in the form of dividends (Correia *et al.*, 2011:1-18). In these instances when distributions are made, preferred stockholders must be paid before common stockholders. However, it is important to consider that during times of insolvency, common stockholders are last in line for the company's assets. This means that when the company must liquidate and pay

all creditors and bondholders, common stockholders will not receive any money until after the preferred shareholders are paid out (Correia *et al.*, 2011:1-18; Investopedia, 2013c).

It can be stated that dividends of preferred shares are different from and generally greater than those of common shares. When an investor buys preferred shares, investors have an idea of when to expect from a dividend because they are paid at regular intervals. This is not necessarily the case for ordinary shares, as the company's board of directors will decide whether or not to pay out a dividend. Because of this characteristic, preferred shares typically doesn't fluctuate as often as a company's common shares and can sometimes be classified as a fixed-income security (Brown & Reilly, 2009:73; Swart, 2012:247). Adding to this fixed-income personality is the fact that the dividends are typically guaranteed, meaning that if the company does miss one, it will be required to pay it before any future dividends are paid on either share.

4.3.2.2 The Bond Market

In the same manner that individual investors need funding for investments, so do companies and governments (Choudhry, 2006:6; Fabozzi, 2005:4). Companies may require funds to expand into new markets, while governments may require money for everything from infrastructure development to social programs (Fabozzi, 2005:1495). One of the challenges that larger organizations experience is that the organizations typically require far more funds than the average bank can provide (Choudhry, 2006:166; Zucchi, 2013). The solution for many companies is to raise money by issuing bonds (or other debt instruments) to a public market to be sold. Thousands of investors each lend a portion of the capital needed to the company. In reality a bond is nothing more than a loan for which investors are the lenders and the organization that sells a bond is the issuer. The bond market or more appropriately named, fixed-interest-bearing securities, refers to the following three primary categories (Swart, 2012:247):

- ***Gilt-edged Shares:*** I owe you (IOU) issued from the government in return for the funds the investor loaned. To be redeemed in the future (Choudhry, 2006:47).
- ***Semi-gilt-edged Shares*****:** IOUs issued by larger municipalities or government subsidized institution such as: Telkom, Eskom or Transnet.
- ***Debentures:*** IOUs issued by a company (Fabozzi, 2005:318).

The various types of bonds can be categorized as:

- ***Corporate Bonds:*** A company can issue bonds in the same manner that it can issue shares. Large corporations have a lot of flexibility as to how much debt they can issue: the limit is whatever the market will bear. Generally, a short-term corporate bond has a maturity of less than five years, intermediate is five to 12 years and long term is more than 12 years (Fabozzi, 2005:312; Livingston, 2003:26).
- ***Convertible Bonds:*** A convertible bond may be redeemed for a predetermined amount of the company's equity at certain times during its life, usually at the discretion of the bondholder (Livingston, 2003:236). Convertibles are sometimes called “CVs.”
- ***Term Bonds:*** are bonds from the same issue that share the same maturity dates. Term bonds that have a call feature can be redeemed at an earlier date than the other issued bonds. A call feature, or call provision, is an agreement that bond issuers make with buyers. This agreement is called an "indenture" which is the schedule and the price of redemptions, plus the maturity dates (Fabozzi, 2005:254).
- ***Callable Bonds:*** Callable bonds, also known as "redeemable bonds," can be redeemed by the issuer prior to maturity. Usually a premium is paid to the bond owner when the bond is called (Fabozzi, 2005:320).
- ***Amortized Bonds:*** An amortized bond is a financial certificate that has been reduced in value for records on accounting statements. An amortized bond is treated as an asset, with the discount amount being amortized to interest expense over the life of the bond. If a bond is issued at a discount - that is, offered for sale below its par (face value) - the discount must either be treated as an expense or amortized as an asset.
- ***Angel Bonds:*** Angel bonds are investment-grade bonds that pay a lower interest rate because of the issuing company's high credit rating. Angel bonds are the opposite of fallen angels, which are bonds that have been given a “junk” rating and are therefore much more risky (Fabozzi, 2005:332).
- ***Junk Bonds:*** A junk bond, also known as a “high-yield bond” or “speculative bond,” is a bond rated “BB”or lower because of its high default risk. Junk bonds typically offer interest rates three to four percentage points higher than safer government issues (Fabozzi, 2005:332; Livingston, 2003:156).

There exist many advantages of investing in the bond market. In general, investing in debt is safer than investing in equity. In terms of safety capital or investment, bonds from the U.S. government (Treasury bonds) are considered “risk-free” and are seen as the global standard for risk free instruments. This risk-free attribute of some bonds is exceptional considering there are no “risk-free” shares (Fabozzi, 2005:230). Although these bonds do not exactly yield high returns, if capital preservation is the investor’s primary goal, a bond from a stable government is a good investment for an investors (Livingston, 2003:26).

The interest rates on bonds are typically greater than the rates paid by banks on savings accounts found in South Africa. Whether investors are saving or waiting to invest, bonds have historically been a good place to “park” funds considering it offers better returns than most saving accounts (Choudhry, 2006:13).

Bonds are a safe and conservative investment for investors. They provide a predictable stream of fixed income. When equities are performing poorly, they are considered great savings vehicles for when investors don't want to put their money at risk.

4.3.2.3 The Derivative Market

A derivative is a security of which the price is reliant upon or derived from one or more underlying assets. Hence the market name “derivative” (Chisholm, 2004:1). A derivative in itself is merely a contract between two or more parties associated with a specific trade. The fundamental value of the agreement is determined by fluctuations in the underlying asset (Chisholm, 2004:2; Fabozzi, 2005:263). The most common underlying assets include commodities, bonds, shares, currencies, interest rates and market indexes. Most derivative instruments are characterized by high leverage and high risk (Chance, 2001:19).

Within the investment landscape there exists various asset classes available for investment opportunities, many of these financial instruments (i.e. shares, bonds, commodities and currencies) are aptly referred to as cash instruments or primary instruments (Chance, 2001:4; Chisholm, 2004:1). The values of primary instruments are determined directly by markets and their underlining economics. In contrast, a derivative’s intrinsic value stems from the value of some other financial asset or variable associated with the instrument (Chisholm, 2004:2). A

simplistic example of a derivative is an instrument such as a share option. It is a derivative that derives its underlined value from the value of a share in the market. An interest rate swap is also regarded a derivative instrument because it derives its value not from an underlining asset but rather from an interest rate index (Chance, 2001:579).

The asset from which a derivative derives its value is referred to as the underlying asset (Chance, 2001:4). The price of a derivative rises and falls in accordance with the value of the underlying asset. Derivatives are designed to offer returns that mirror the payoffs offered by the instruments on which they are based.

The Charted Institute for Financial Analysis regard forward contracts, futures contracts, swaps and options as the most commonly traded types of derivatives within the derivative market (Maginn *et al.*, 2007:162). As stated derivatives are contractual obligations (contract) and can be used as an underlying asset. There are vast amounts of different derivatives, from the aforementioned commonly traded options, swaps, forward and future contracts to exotic derivatives based on weather data, such as the amount of rain expected or the amount of sunshine days in a particular region (Chance, 2001:28).

Some of the common variants of derivative contracts are as follows:

- ***Forwards:*** A forward is a tailored contract between two parties, usually a buyer and seller. The buyer of the forward contract agrees to buy an underlying asset from the other party (the seller), where payment takes place at a specific time in the future at a pre-determined price at the time of the agreement (Chisholm, 2004:24; Epps, 2000:2). Most forward contracts don't have standards and aren't traded on exchanges. A farmer would use a forward contract to "lock-in" a price for his grain for the upcoming fall harvest (Livingston, 2003:246). A forward is an agreement between two counterparties.
- ***Futures:*** Future contracts are also agreements between two parties in which the buyer agrees to purchase an underlying asset from the other party (the seller) (Chisholm, 2004:33; Epps, 2000:6). The delivery of the asset occurs at a later time, but the price is determined at the time of purchase. A futures contract differs from a forward contract in that the futures contract is a standardized contract written by a clearing house that operates an exchange where the contract can be bought and sold. The forward contract

is a non-standardized contract written by the parties themselves (Chance, 2001:6; Epps, 2000:151).

- ***Options:*** An option is a common form of a derivative. It's a contract, or a provision of a contract, that gives one party (the option holder) the right, but not the obligation to perform a specified transaction with another party (the option issuer or option writer) according to specified terms (Chisholm, 2004:69). Options can be embedded into many kinds of contracts. For example, a corporation might issue a bond with an option that will allow the company to buy the bonds back in ten years at a set price. Standalone options trade on exchanges or OTC. They are linked to a variety of underlying assets (Chance, 2001:5). Most exchange-traded options have shares as their underlying asset but OTC-traded options have a huge variety of underlying assets (bonds, currencies, commodities, swaps, or baskets of assets). The price at which the sale takes place is known as the strike price, and is specified at the time the parties enter into the option (Chance, 2001:5). Options are of two types: call option and put option. The buyer of a Call option has a right to buy a certain quantity of the underlying asset, at a specified price on or before a given date in the future, however he has no obligation whatsoever to carry out this right. Similarly, the buyer of a Put option has the right to sell a certain quantity of an underlying asset, at a specified price on or before a given date in the future, he however has no obligation to carry out this right (Chisholm, 2004:89).
- ***Swaps:*** A swap is one of the most simple and successful forms of OTC-traded derivatives (Chisholm, 2004:49). It is a cash-settled contract between two parties to exchange (or "swap") cash flow streams (Chance, 2001:7; Livingston, 2003:233). As long as the present value of the streams are equal, swaps can entail almost any type of future cash flow. They are most often used to change the character of an asset or liability without actually having to liquidate that asset or liability. According to Chisholm (2004:58) swaps can be categorized into two inherent types: (1) Interest rate swap, swapping only interest associated cash flows within the same currency, (2) Currency swap, the cash flow between the two parties includes both principal and interest, associated with different currencies being swapped among parties.
- ***Binary options:*** A type of option in which the payoff is structured to result in either a fixed amount of compensation when the option expires in the money or the entire investment is lost if out of the money. These contracts provide the owner with an all-or-nothing profit profile.

- ***Warrants:*** A warrant is a derivative security that gives the holder the right to purchase securities (usually equity) from the issuer at a specific price within a certain time frame (Fabozzi, 2005:14). Conversely to commonly used and traded short-dated options (which have a maximum maturity period of 1 year) warrants are longer-dated options. These are generally traded over-the-counter (OTC). Warrants are often included in a new debt issue as a "sweetener" to entice investors.

Derivatives are largely used by investors as an instrument to hedge against risk, but they can also be used for speculative purposes by investors (Chisholm, 2004:50). An example of speculative derivative trading is when a European investor purchases shares from an American company by utilizing American currency. This company would be exposed to exchange-rate risk while holding that share. To hedge this risk, the investor could purchase currency futures to lock in a specified exchange rate for the future share sale and convert the currency back into Euros.

4.3.3 Collective Investments or Unit Trusts

A mutual fund, also known as a collective investment scheme or a unit trust, is a fund operated by an investment company (or a bank). The fund consequently pools groups of funds, trust accounts or individual amounts for the investors and then invest the funds. The main function of unit trusts or collective investments is to combine the funds of investors (individuals and organizations) and buy assets to create a larger more diversified portfolio that, when assuming capital constraints, would normally be almost impossible for individual investors (ASISA, 2014).

A collective investment fund or a unit trust is nothing more than a collection of handpicked investments such as shares and/or bonds. The investors own or buy share parts of the whole fund, which represent their portion of the holdings of the fund and so the investment. The primary goal of a collective fund or unit trust is to lower the costs associated with trading investment through economies of scale. These pooled funds from the investors are grouped or combined into what is known as a "master trust" account under the control of the investment company (Investopedia, 2013a). This company performs the function of an investment professional or advisor that acts as administrator, trustee, guardian, or executor of the pooled

funds and so the investments. These funds supply quarterly or annual newsletters and reports relating to the performance of the fund and the investors' share of the performance. The investors then usually have the choice to reinvest or to cash out the gains, if any, at their choosing.

4.3.3.1 Types of Unit trusts

Unit trusts have predetermined investment objectives and these objectives are set out by management. Management of the funds tailors the fund's assets, investment strategies and regions in which the companies will invest. At the fundamental level, there are three varieties of mutual funds:

- Equity funds (focuses on equity-shares market investments).
- Fixed-income funds (focuses primarily on the bonds market investments).
- Money market funds (focuses primarily on the interest bearing money market).

All unit trusts, mutual funds or collective investment schemes are variations of these three fundamental fund types. The following advantages and disadvantages of collective investment schemes are relevant in the high-value wildlife investment landscape due to ranchers also managing the investments/wildlife for investors.

4.3.3.2 Advantages of Unit Trusts

- ***Professional Management:*** The best known and primary advantage of mutual funds is the professional management of investors' money. A unit trust is a moderately inexpensive way for smaller investors to get a full-time professional investment manager to make and monitor their investments (ASISA, 2014).
- ***Diversification:*** For investors owning shares in a collective scheme instead of owning individual investments such as company shares or government bonds, they gain a spread in risk. This diversification advantage is very difficult to attain as an individual due to lack of fund and/or time (PSG, 2013).
- ***Economies of Scale:*** Unit trusts buy and sell larger amounts of investments at a time in comparison to the average investor; this gives it a cost advantage known as

economies of scale. Transaction costs are lower for these funds than what an individual typically would pay for the same securities transactions.

- ***Liquidity:*** The same as with individual shares, a unit trust allows investors to request that their shares be converted into cash as investors see fit.
- ***Simplicity:*** While buying and monitoring equity can be a laborious task for an individual, mutual funds are simplistic and easy to buy into. Most mutual funds can be bought over the internet or at an investment professional or bank (PSG, 2013).

4.3.3.3 Disadvantages of Unit Trusts

- ***Costs:*** The creation, distribution, and running of a mutual fund is an expensive endeavour. Costs are high because of managers and administration staff's salaries. Additionally managers have to report back to the investors and this is usually done by issuing statements to their investors. Those expenses are simply passed on to the investors. These fees vary considerably from fund to fund, investors who fail to pay attention to the fees can experience negative long-term consequences to their portfolio.
- ***Dilution*****:** It's possible for investors to have too much diversification within their portfolio. Dilution is the result of a successful collective investment scheme or fund becoming simply too big. When funds are poured into mutual funds that historically had strong success, fund managers are consequently hard pressed to find new good performing investments for all the new available money, which is not always possible. Early investors are then exposed to those growth pains of the fund.

As with virtually any investment, there are risks involved in buying mutual funds or unit trusts. These investment vehicles are exposed to market fluctuations just like other investments, thus they can sometimes provide returns below the overall market performance. The advantages gained from investing in mutual funds do not come without a price: high annual expense fees and penalties for early withdrawal can be negative for the overall performance of one's investment in the long run.

4.4 REAL OR TANGIBLE INVESTMENT OPTIONS

Due to increasing market pressure, as well as the 2008 recession, investors are seeking ever higher returns and new ways to mitigate risk. This resulted in investors seeking new ways to diversify their portfolios, spread losses and better risk distribution to maximize their return (Mayo, 2008:866).

The term “real assets” or “tangible assets” refers to a comprehensive category of investment options that are characterized sensory inputs such as being able to touch an asset (as opposed to bonds, shares and CDs). Real assets also referred to as hard assets, can play an important part in any individual’s investment portfolio. Investing in hard assets requires investors to consider some important caveats and additional considerations that come with investing in real assets, as opposed to financial instruments.

One of the sturdiest rationales for obtaining real assets and collectables, is their impact on diversification (Renneboog & Spaenjers, 2013:36). According to Mayo (2008:833) financial assets tend to follow a positive correlation. When shares rise, bonds also rise accordingly, it is due to corresponding factors affecting both shares and the bond market (Mayo, 2008:833). This principle can be seen in action when lower interest rates prevail, and this tends to cause a bullish market in both bond and equity markets. Conversely, increased interest rates decrease the over-all appetite for bonds and shares within the market as a whole.

Within the real asset or alternative investment landscape there exists opportunities for investors to achieve negative correlation in respects to their returns on financial instruments. This can be seen when an increase in interest rates causes a positive knock-on effect on real estate. When interest rates increase, less companies and individuals are able to meet the increase in costs of the higher interest. This creates a market where there is an increased demand for property with limited supply available, increasing the price a landlord can ask for letting his property.

This subsection will discuss different categories of real assets that investors traditionally consider. Also included in this subsection is an introduction into the development of higher-wildlife as an alternative investment.

4.4.1 Collectables

Investopedia (2011a) defines a collectable as an item that is considerably worth more than it appears to unscrupulous eyes, this is because of its rarity and/or demand associated with the item. The most common categories of collectables include art, toys, antiques, coins, comic books and stamps. Investors who invest in collectables usually do not intend the investment to be purely about financial gain. It is usually purchased as part of a hobby or personal interest for other intangible purposes such as aesthetic value or taste (Investopedia, 2011a).

Individuals contemplating investment in collectables face unique challenges when attempting to navigate the various markets encapsulated within this real asset investment. The challenges faced by investors investing in collectables include a lack of information, difficulty finding available inventory, a lack of reliable pricing data, high storage costs, and very large differences in the prices at which similar items can be bought or sold.

Most of these collectable assets listed below do not generate any fixed-income. Conversely, it usually entails additional costs such as maintenance and storage in order to maintain the value of the investment. Picking profitable collectables in the investors' chosen interest categories entail a fair amount of knowledge and skill to turn a profit and all of these factors contribute to making many collectibles inappropriate for the average investor (Investopedia, 2011a).

Here follows a list of several popular alternative investment possibilities:

- ***Fine Art*:** Art investment has been ever increasing in the public eye due to theft and sky rocketing prices. In the international market Claude Monet's *Dans la Prairie* was auctioned for 11.2 million British pounds in 2009 (Renneboog & Spaenjers, 2013:36). Locally William Kentridge's *Stereoscope* received a staggering R2.24 million at an October 2011 auction from an original bought price of R90 000 in 1999, seeing a 34% return on compounded annual growth rate (Ferreira, 2011:55). As a rule of thumb investment specialists suggest holding 10% of an investor's portfolio in art.
- ***Wine and Alcohol*:** Recent studies have shown that wine does not have a strong positive correlation with traditional financial assets. However, assuming the return

of wine as relatively low, it can be seen as a good investment in its portfolio diversification and risk reduction mitigation (Fogarty, 2010:119). Between 2008 and 2011 a rare vintage of whiskey Dalmore 1926 saw prices at auction rise to 450%. The Macallan 1938 saw capital growth of 425% in the same period (Sen, 2012:84).

- ***Stamps:*** Whilst considered a hobby by many known as philately there is an estimated 30 million stamp collectors worldwide, this clearly indicates the liquidity and investment possibilities of stamps as an alternative investment (Irion, 2004:24). Regression analysis of excess returns on the stamp index against British excess share returns showed a significant positive alpha. This yields a clear positive possibility as a diversification possibility (Veld & Veld-Merkoulova, 2007:56).
- ***Persian Carpets:*** As an aesthetically pleasing commodity, carpets have resulted in high prices since ancient times due to the nature of its handmade manufacturing. Knowledge of what investors are buying is crucial to establish the potential on the investment; the internet has greatly enhanced the availability of information and created consumer awareness (Laschinger, 2004:39). Whilst returns are significant, they vary between 10-20% depending on the artistic execution and the traditional weaving region where it was produced. Returns are seldom above market movement, but due to its aesthetic value and its 50-200 year lifespan it is still considered as a good alternative investment (Reynolds, 1997:B25).
- ***Classic motor vehicles:*** For many a vehicle is only a means of transport. Modern vehicles depreciate considerably corresponding to the year produced and the mileage driven (Butcher, 2007:38). Classic cars such as 1958 Ferrari 250 GT and the Mercedes-Benz 300 SL Gullwing beat the odds with actual growth instead of depreciation. Broad spectrums of other cars are tracked by the Historic Automobile Group International Index. This Index shows a 12% annual growth on prices for vehicles such as 1968 Ford GT40 which Steve McQueen drove in the movie “Le Mans” and was sold for $11 million (Ebeling, 2012:27). Classic cars are aesthetically pleasing investments that many around the world buy as a nostalgic item that gives considerable return.

4.4.2 High-value Wildlife

As stated in chapter one of this text, high-value wildlife is currently being utilized and offered as an investment opportunity for investors. The nature of the investment correlates to the definitions earlier in this subsection regarding tangible or real assets. As with all the real assets discussed, high-value wildlife entails various additional considerations as it is inherently different from traditional financial investments. The physical nature of the investment requires additional maintenance and management that financial investments do not. Chapter five will detail and discuss the various elements of high-value wildlife that needs to be considered and addressed.

4.5 INVESTMENT APPRAISAL AND ANALYSIS TECHNIQUES

4.5.1 Introduction

Capital budgeting and investment appraisal are two financial terms that are used interchangeably relating to the study of the analysis methods in investment sciences. Correia *et al.,* (2011:8-4) states that capital budgeting is the evaluation and the ultimate analysis of investments over time, which will provide economic gains over the period of its lifespan.

Investment appraisal is the planning process used to determine whether an organization's long-term investments such as new machinery, replacement machinery, new plants, new products, and research development projects are worth pursuing for the purpose of new investment (Sullivan & Sheffrin, 2003:375). Gad (2007) further states that capital budgeting or investment appraisal is the tool by which a company administers its investment opportunities in additional fixed assets or real non-monetary investments. This is done by evaluating and comparing the cash in-flows and out-flows of investment options. Gad (2007) continues to state that once such opportunities have been selected or identified, management is then tasked with assessing whether or not the investment or project is desirable. Investment will entail funds of a company or individual to be tied up for a considerable period (Correia *et al.,* 2011:8-1).

Earlier in this chapter there was specifically discussed the difference between financial and real non-monetary investments, and Gad's (2007) definition of investment appraisal underpins how

investment appraisal techniques can be utilized essentially for any fixed real asset investment considerations, such as an investment in high-value wildlife.

4.5.2 Investment Appraisal Methods

According to CIMA (2012:306) and Mott (1997:52) there are five main investment appraisal techniques, although derivation of the same concept are commonly found in financial management. By investigating the various investment appraisal techniques it will enable this research to ascertain whether any of these methods are appropriate in establishing a holistic model that guides investors to analyse an investment in high-value wildlife. As previously stated many of these methods are used extensively in the field of financial management for enterprises, but the methods are irrevocably relevant to individual investors.

It is paramount that qualitative factors not be neglected in the analysis of a potential investment, and the following section will focus on quantitative analysis techniques. Chapter five details extensively how qualitative factors (on hand of the investment characteristics discussed in chapter three) relates to investment in high-value wildlife.

In the literature review for this subsection, small adjustments to commonly used techniques such as payback period and discounted payback period are discussed. Many of these small adjustments take an existing concept and adjust the values produced with for example; the time value of money. Many of these analysis techniques are simplified or hybrid methods that are used extensively in the field of investment analysis (Sullivan & Sheffrin, 2003:375). For the purpose of this study the following categorical subsection will be discussed as they form part of the most widely used methods and techniques for investment appraisal or capital rationing, they are as follows:

1. Return on Investment (ROI).
2. Payback period and discounted payback period.
3. Accounting rate of return (ARR).
4. Net present value (NPV).
5. Internal rate of return (IRR) and Modified internal rate of return (MIRR).

Most of these methods make use of incremental cash flows from each potential investment or project that is being considered by the investor.

4.5.3 Return on Investment (ROI)

Return on investment is traditionally the go-to investment performance metric. The calculation offers investors a means to measure per period the return offered from the invested capital (Krajice, 2013:8). With this information investors are able to compare by means of an indicator investment alternatives or projects that the investor might want to undertake. ROI offers investors a snapshot of the performance or profitability of the investment endeavour, whilst adjusting for relative size of the funds dedicated to the enterprise (Beattie, 2010).

The formula for ROI:

$$Return\ on\ Investment\ (\%) = \left(\frac{Net\ Profit}{Investment}\right) * 100$$

Or alternatively

$$Return\ on\ Investment\ (\%) = \frac{(Gain\ from\ Investment - Cost\ of\ the\ Investment)}{Cost\ of\ the\ Investment}$$

It is important to note that ROI has certain weaknesses and shortcomings as an appraisal technique. This method only compares the profit of an investment to the funds invested. The calculation ignores the time value of money. The ROI model disregards expected cash flows and does not factor the incremental costs associated with the investment over the time value of money, it also does not factor in the likelihood of such estimations (Guzman, 2008). ROI is considered a strictly financial measure and fails to factor in intangible aspects of the investment endeavour.

Despite these weaknesses, the advantages of ROI do lean it towards being one of the most suitable appraisal techniques available to this study in high-value wildlife as an alternative investment. ROI provides the investment industry with a standardized metric for investment performance, while at the same time being an analysis method which is easy to understand.

This method offers investors the opportunity to compare between various investment opportunities for projects by indicating the profitability of a specific investment or project.

The fact that ROI provides investors a uniform or standardized calculation or analysis over numerous assets serves as a double edged sword, considering it also endangers investors (Beattie, 2010). This is attributed to intrinsically different asset classes having fundamental differences in how costs and returns are accounted for. The following are examples of investments and analysis pertaining to ROI calculations that are commonly botched according to Beattie (2010):

- ***Real Estate***

Property investing can offer two different returns, capital appreciation or growth in the value of the property and rental income. Rental income offers investors monthly gains that can be added to the realized returns at the sale of the property, the costs however can come from various sources such as maintenance to the property, purchase price, property taxes and insurance. When quoting ROI on a real estate investment, investors to a large extent disregard the running costs associated with such an investment. Their calculation only takes into account the purchase price and the price at sale. This indicates how over exaggerations of returns can occur if all the relevant factors are not taken into consideration.

- ***Shares***

Shares are subject to the same omissions of cost as is seen with return calculations in real estate. Investors in many cases fail to account for their transaction costs in ROI calculations. If an investor makes a R100,00 gain but overlooks the R20,00 they incurred in purchase and sale of the shares, the ROI calculation will be grossly over inflated.

- ***Collectibles***

As stated above collectables can be highly profitable. However, collectibles are seldom purchased at their original prices and, conditional on the type of collectable, could have high insurance and incremental maintenance costs that can drastically over time reduce ROI.

4.5.3 Payback Period

Payback method is considered a simplistic appraisal technique which involves determining how much time will be needed in order to generate a payback return for the investment. The payback period technique aims to measure the time taken for the cash inflows from a specific capital outlay or investment to equal its initial investment. Intrinsic limitations within this method are the accurate prediction of uncertain future cash flows that will occur within the lifespan of the specific asset. Shorter payback periods in investment alternatives according to CIMA (2012:307) are considered less risky to longer investment. This is attributed to investors' ability to predict influencing factors better in the short term, in comparison to a longer ultimately more uncertain investment period. These limitations make the payback period unsuitable for the sole appraisal technique due to the mathematical exclusion of cash flows that arise after the payback period.

CIMA (2012:309) concludes that the payback method has well-documented drawbacks due to future cash flows in themselves not necessarily indicating increased wealth for investors. This is mainly attributed to this method not taking into account the time-value of money or inflation. The repayment amount does not take into consideration that money in the future is not worth as much as the equivocal amount now.

There are many advantages to utilizing the payback period method. Investors or decision makers can easily understand the information presented to them, and the calculations are straightforward and likely to be error free. Furthermore this is a relevant method for both businesses and individuals with cash flow problems, considering it calculates the estimated time until they will break even. The calculation emphasises the speed of returns before breakeven is achieved and is a useful analysis of rapidly changing markets.

While the advantages mentioned above are noteworthy, there are also disadvantages to the payback period method. By relevant cash flows being given equal weight within the payback period, cash flows outside the payback period are ignored in the calculation. As every investment differs, it becomes difficult to determine how long the payback period should be, and so establishing a target payback period relating to the chosen investment becomes problematic. Furthermore the method disregards the money received after payback whilst also

not taking the future value of money into consideration. The payback method is a short term approach in regards to an investment appraisal, therefore not necessarily making it the most ideal method within the industry.

The payback period method will yield considerably more reliable information (relating to an investors investment) when such a calculation is able to take into account the time-value of money. This failure to take inflation into account in the payback analysis method can be corrected by adjusting the cash flows with an appropriate discount rate. The discounted payback period is the time it would take the present value of an investment's cash flows to equal the cost of the initial capital outlay (Correia *et al.*, 2011:8-12). By adjusting the cash flows with an appropriate rate, more accurate information can be derived from an investor's calculation.

Whilst this can be considered an improvement on basic payback period, this analysis method can still not be used in isolation as the sole investment appraisal method (CIMA, 2012:313).

The payback period is considered by professionals to be a good starting point in any investment appraisal. This is mainly due to its simplicity and that this method can help screen investment projects before more detailed analysis is performed (CIMA, 2012:309). By adjusting for the time value of money, this method is able to supply investors with more accurate and reliable information than before.

As discussed in chapter three, investors ideally have to follow a plan or process when investing. Stage three of the investment process (Portfolio Compilation) coupled with the subsection investment alternatives selection (both detailed in previous chapters) identifies that investors have to critically examine various assets when considering an investment.

The discounted payback period method enables investors to quickly determine if an investment is appropriate taking into consideration the time frame and the expected returns that the investor requires for each individual investment. This rings true when considering an investment in high-value wildlife. As with traditional investment options, various investments have different maturity periods. High-value wildlife as an industry can be broken up into various asset classes or species; each specie has its own birthing intervals and so its own maturity.

When deciding among various species, the discounted payback period could potentially be of use for ranchers and investors alike – not because the calculation is accurate in establishing a return, but its ability to talk back to the investors' expected return. The expected return varies from investor to investor and is based on the amount of return he expects over the time he wishes to invest his funds. By utilizing the discount payback method investors in high-value wildlife could potentially evaluate what species will fit their expected return best for the period they wish to invest in high-value wildlife. The payback period calculation also potentially correlates with risk management techniques, considering that the price risk associated with high-value wildlife may be mitigated by identifying the species/investment with the shortest payback period, and consequently it identifying the species with the lowest risk associated to it.

The difficulty for investors who aim to utilize any discounted method that adjusts for the time value of money is determining the appropriate discounting rate. Calculating the appropriate discount rate will be discussed in more detail below.

4.5.4 Net Present Value (NPV)

One of the most widely used tools and as Correia *et al.*, (2011:8-15) states, the most relevant investment appraisal methods, is NPV. NPV analysis methodology utilizes cash flows and discounts these positive and negative cash flows in order to establish the value of the investment. In essence this requires calculating and comparing the investment costs (cash outflows) versus the income generated by the investment (cash inflows). Cash flows differ widely from what the accounting income states due to varying accounting conventions employed by companies (Correia *et al.*, 2011:6-16).

By making use of cash flows or discounted cash flows (DCF) as an investment analysis method, investors are better able to navigate difficult situations where they are facing unknown risks and uncertainty. NPV analysis method refers to the term "present value" of an investment, whereby the value of the funds in one's hands now is worth more than incomes in a few years' time. By discounting the value of the investment (adjusting for the time value of money) by means of a discount rate, investors are able to gauge and compare among cash flows.

In project management or investment appraisal the general rule is that where NPV method is utilized, positive NPV or positive DCF calculations will result in the go-ahead for the investment if independent projects are considered. Negative NPV results or calculations pertaining to investment will be rejected. In the case of mutually exclusive investment options the highest NPV should be accepted.

This raises an interesting point pertaining to investments in higher-value wildlife. Ranchers and investors alike face decisions of what species to buy or to invest in. By calculating a present value of the offspring and original herd and discounting the value of the investments and expenses, investors and ranchers will be able compare species of the various high-value wildlife on equal footing potential. The selling price of the wildlife at auction, original and offspring, will also dramatically affect the return or discounted return of the investment. The selling price will depend on the auction prices at liquidation.

The NVP method does not only factor in the time value of money by means of a discount rate, but also directly measures the rand contribution to investors. Another advantage of this method is that various factors can be taken into account in the calculation, including tax and inflation. Although this is a great advantage, it is also time consuming. Furthermore, investors who are not financially educated find the calculations and results difficult to understand. Another disadvantage of this method is that it is based on arbitrary factors such as the chosen interest rate and uncertain assumptions made by the investor regarding the investment.

4.5.4 Accounting Rate of Return (ARR)

CIMA (2012) defines accounting rate of return (ARR) as a method of estimating the return relating to an investment without the use of discounting techniques or compounding. Furthermore, investment inflows are summed and additional investment costs are subtracted to derive the profit of the investment. By dividing the profit from the investment by the economic useful life or period relating to such investment, an average annual profit is established. This average is consequently divided by the average investment cost to determine an annual rate of return. The formula for determining accounting rate of return (ARR):

$$\frac{Average\ annual\ profit}{Average\ investment} \times 100$$

Average investment is equal to the average book value of the employed capital within the investment; this amount includes the average of the initial investment also taking into account residual value. When not taking the residual value into account, the average investment will equal the average book value of the underlined investment. Within certain cases the initial investment may be used as substitute instead of average investment.

Average annual profit can also be substituted by an *average incremental net income* according to Correia *et al.,* (2011:8-11). The major difference among net income and cash flow relates to no-cash flow items such as depreciation. This is a major concern when considering this analysis method for higher-value wildlife since non-cash flow items are considered neglectable.

4.5.6 Internal rate of return

Internal rate of return (IRR) is a metric commonly used to measure investment efficiency. McGraw (2013) states that IRR is the most widely rate-based capital appraisal or budgeting technique utilized by analysts considering the static IRR will provide investors the same accept or reject information that NPV method would provide. IRR can be described as a discount rate that calculates to a NPV or net present value and equates to zero. IRR will present investors with the same result for the same investment decision as the NPV, determined upon the investment not being mutually exclusive. Adhered upon the negative cash flow at the beginning of the investment and all future cash flows thereafter are positive.

It is once again important to note the various advantages and disadvantages of the IRR method as an appraisal technique. IRR can produce conflicting results when compared to the NPV method of analysis for mutually exclusive investments or projects. The IRR method produces a hurdle rate (as discussed in the third chapter of this research) for investment decision making. Furthermore, this method is based on the assumption that reinvestment takes place at the same rate as that of the IRR. Because of this, the IRR method can potentially overstate the annual equivalent rate of return on an investment, especially in the case where reinvested funds produced from the investment are at a lower rate than the calculated IRR. As IRR does not

factor in the cost of capital, it should not be utilized for investments with differing durations. This method can produce multiple values or discount rates when positive cash flows are followed by negative values and then new positive values. The results are also difficult to understand as it requires finance specific knowledge. Another disadvantage is that the IRR method can be difficult to compute, as computer analysis anomalies could potentially result in misleading results pertaining to reinvestment.

That being said, the IRR method is advantageous in the sense that it indicates the return of the investment according to the original funds invested, while the returns for the time value of money is appropriately adjusted. This allows investors the ability to uniformly rank investments as there is no basis for the investor to select a specific IRR. IRR can potentially be of value as an analysis method in high-value wildlife investment as it allows for losses to be taken into consideration in the initial years after the herd has been established. This consequently allows the investor to compare other investment opportunities and different types of wildlife, each with their own breeding characteristics, which may yield positive returns from the onset.

Investopedia (2011c) states that IRR can be considered the growth rate that an investment can anticipate to produce. The actual return of the investment will in most cases differ considerably from what originally was estimated at the beginning of the investment. A higher IRR offers investors the high probability of growth in comparison to other analysis methods.

4.6 CONCLUSION

This chapter discussed different investment options other than high-value wildlife available to investors. These different options will enable investors and the research in this text to understand the fundamental nature and context of the industry of which the high-value wildlife industry forms part. The chapter concludes with various investment appraisal techniques that are commonly used for analysing investments and investment projects. Analysis techniques enable analysts to establish the inherent value of investments and thus estimating their potential. The literature review regarding analysis methods provides a theoretical basis for recommendations in terms of investment analysis guidelines for investing in high-value wildlife.

For the purpose of this study, high-value wildlife can be seen as a real asset investment as it has the same inherent properties as the real asset investment. Investing in real assets poses unique challenges not faced in many other traditional investment options, but the context of widely used investment options such as shares and bonds need to also be considered as they form the benchmark of all investments. Investors should carefully consider the costs and income challenges entailed in real asset investing before deciding whether to include real assets as part of a diversified investment portfolio. If, after carefully considering the challenges, investors decide to purchase real assets, they will find that they often serve as an excellent store of value and as a hedge against inflation.

Non-financial or alternative investments might not always be the most lucrative of investments, but they offer the possibility of risk reduction within a portfolio due to their diversification properties. In such cases tangible assets are not alternative to traditional investments but complementary. The question for investors considering investment in high-value wildlife remains to determine what qualitative factors and industry specific information is needed to comprehend an investment in high-value wildlife. Understanding the high-value wildlife industry will enable investors to make informed decisions based on factual industry specific elements founded in sound financial management principles.

CHAPTER 5: HIGHER-VALUE WILDLIFE EMPIRICAL STUDY

5. EMPIRICAL RESEARCH FINDINGS

5.1 INTRODUCTION

In chapter one, the primary research objectives of this study were detailed with the primary objective being to develop guidelines for investors (institutional or individual) to analyse and evaluate investments in high-value wildlife. By utilizing the theoretical framework set out in the chapters that followed on the first, this research aims to not only develop a model that is applicable in the South African context but also to enable international investors to understand and comprehend a new lucrative market that is high-value wildlife.

This model will ultimately afford new investors a means to critically analyse future investments whilst enabling current investors the ability to benchmark their own performance to a best practice approach. The line of questioning was specifically developed in order to address the primary and secondary objectives pertaining to this study. The information was gathered by means of scheduled interviews in association with a semi-structured interview guide.

The interview guide was structured to encompass six sections, namely i) background (in relation to the investment company chosen for the case study); ii) high-value wildlife and the investment analysis approach (methods and techniques utilized to analyse performance and wildlife valuation); iii) cash flows; iv) costs; v) risk management (effects thereof, risk mitigation techniques and the utilization of discounting rates); and vi) recommendation (advice from experts to investors). This approach acts as a validation test to analyse the method that was followed by the researcher. The interview guide was developed to evaluate investment in high-value wildlife through a holistic approach, in order to appropriately address the objectives of the study.

The two primary case studies were specifically selected based on information given by wildlife experts in association with WRSA management. The WRSA is the largest and sole professional organization pertaining to the breeding and ranching of wildlife in South Africa and the organization represents 2,139 ranchers of an estimate 9,600 in South Africa (Barnard 2013). The organization supplied the researcher with access to their database of members, but due to secrecy, ranchers were unwilling to divulge sensitive information. As stated this study aims to fill the void in regards to the absence of research and applicable data relating to high-value wildlife investment. WRSA's management supplied the researcher with a possible case study subject and a list of experts that could be consulted. For more information pertaining to the rationale for the research methodology please refer to chapter two.

This discussion includes the following:

i. A discussion of the information supplied by the two case studies based on the interviews as per section. Please note that the interviews were recorded via a pocket recorder and all recordings are available for inquiry or future research purposes. These recordings are in possession of the primary researcher. This chapter is written as a narrative relating to the interviews and is also supplemented with literature reviews from the previous chapters. The information from the interviews is discussed in such a manner that it can be comprehended and understood within the appropriate context. The discussion points relating to the interviews are thusly put into context by a narrative of information, to enable ease of comprehension for wide selection of readers without the need of industry specific experience.

ii. Conclusions drawn from the given information in point (i) above.

5.2 CASE STUDIES

5.2.1 Case Study A: Association of ranchers

5.2.1.1 Background information

Case Study A is based on an association of ranchers that have been ranching with wildlife since 2004. This association was created by three adjacent ranchers with the idea in mind to pool funds, knowledge and resources to ultimately grow their business. Frustrated by the slow growth of the association and the absence of institutional loans in the market (due to wildlife

animals not meeting the requirements as collateral assets and uncertainty relating to the liquidity of the wildlife) the association decided to seek funding from private investors.

The company started marketing what it calls "behind closed doors investments" in wildlife since 2011. The investment opportunity offered to investors relates to a minimum investment of R300 000, of which the funds are utilized to purchase (at the discretion of the ranchers) a minimum of one single high-value wildlife animal. The purchased animal will in almost all cases preferably be pregnant at the time of relocation. The purchasing of pregnant animals enables investors and ranchers to see almost immediate return on their investment shortly after the birth of a new born animal. The minimum investment amount stated by the company is not absolute, but merely an average capital investment marketed to investors. The investment might entail a larger (in most cases) or a lesser amount depending on the prices of the wildlife at auction or at private purchase.

The company's ranch traditionally only held common plain species of wildlife, but since the introduction of their investment products they now also offer investment opportunities in high-value wildlife such as golden blue wildebeest (also known as golden gnu), golden gemsbok, white gemsbok and black impala. At the time of the interview, the company had 12 investors with investments that had a combined value of around R34 million. The company's ultimate goal is to attract investments to the amount of R100 million by 2015. The wildlife species that are ranched with are specifically chosen by the company because they offer specific price tiers. This offers investors the ability to choose a "product" that meets their intended capital expenditure and expected return at different price points.

Table 5.2.1.1 indicates the various price points that the ranchers offer their investors.

Price Tiers	**Examples of wildlife who's prices correlates to the price tiers**
Tier 1 R300 000.00 – R600 000.00	Black impala
Tier 2 R600 000.00	Golden gemsbok
Tier 3 R900 000.00	Golden blue wildebeest

The association of ranchers have set capital investment amounts of the various species of wildlife they ranch in, yet it is worth mentioning that the prices are not based on auction prices. The investment amount in all regards is above the average amount investors would have paid at an auction, which is driven by the economic principles of demand and supply.

After purchase, the wildlife is herded into a 30 hectare encampment that on average can hold a breeding herd of 20 animals (depending on the species). The ranchers organize the various encampments according to the species of wildlife bought, and then simply add additional encampments when the twenty animal threshold has been breached. The wildlife within the encampment is then cared for by means of what the industry calls “semi-intensive” feeding practices and entails only supplementary nutrition when the grassland within the encampment cannot appropriately sustain the animals. It is the responsibility of a designated employee to count the wildlife within the encampment daily. The employee is also required to report any problematic issues regarding infrastructure or wildlife wellbeing to management so that the situation can be remedied.

The company does not offer investors their own individual encampments, but rather herds together animals from the same species from various investors. At the company’s own cost, a bull is added to each encampment with the idea that it will impregnate the females. Each animal of the individual investor within the encampment is then tagged and an electronic microchip is injected beneath the skin of the animal for clear identification. Newly born animals are only chipped and tagged at the age of around 6 months. Part of the contractual agreement allows for the ranchers to sell-off the bulls that are born from the rest of the herd. This is mainly because the ranchers are of the opinion that having more than one bull in an encampment will result in infighting among the males for the dominance of the herd.

5.2.1.2 Business Model Analysis

The business model employed by the company entails an agreement between the investor and the company of ranchers to have equal share of the offspring at the end of their contractual agreement. This sharing of offspring is justified on the premise that the company will ensue all day-to-day costs of the wildlife, including but limited to translocation, veterinary expenses, nutritional supplementary and insurance. The 50/50 division of animals is also subject to a contractual condition imposing a minimum lapse of five years from “buy-in” to “cash-out”. Within the contract between the company and the investor there exists the opportunity for the investor to extend the agreement or sell-off all or some of the herd after the five year period has lapsed. Although the contractual agreement makes provision for the possibility of early liquidation of one’s investment, such liquidation is subject to a 10% penalty. To date, this

opportunity to reinvest and/or sell-off some of the herd has not taken place. This is due to none of investors lapsing the five year threshold as yet.

Contrary to the marketing pitch employed by the company which states that the client invests in wildlife, the reality of the agreement is quite different. The contract states that at the time of the investment, the formation of a new "company" between the ranchers and investor comes into effect. The new holder company then effectively entails the newly bought wildlife (purchased by the ranchers by applying the investor's funds). Until the expiration of the contract, the wildlife's offspring are also held within this newly formed company.

This business model was developed by the ranchers due in large to the increased media attention received by the return on investments made in high-value wildlife. The surge in public awareness resulted in greater demand for opportunities that afforded investors exposure to the high-value wildlife market. According to the company, many clients are discouraged by the high capital cost needed for infrastructure, land, fences and animals, as well as knowledge and experience requirements in the breeding of these wildlife species.

The company highlighted the advantage of their model as a tool which enabled them to grant their investors access to the lucrative high-value wildlife market. According to their marketing manager, the "investors" are able to gain entry into the high-value wildlife market which is known for high returns whilst circumventing traditional high entry barriers. These barriers include having a ranch that is equipped with all the required infrastructure, labour and equipment, whilst also bypassing the knowledge requirements necessary to be successful.

The company indicated that it shunned away from traditional investment approaches such as share issues of a herd or a collective investment scheme business model, to bypass the sheer administration and legislative requirements stipulated by the Financial Service Board (FSB), to name but one example. According to the ranchers investors wanted to have physical possession of animals that they bought. This is because it enabled investors to clearly see the offspring, and so monitor the growth of their investment over time. Investors are also afforded the opportunity to visit the ranch and self-assess their own wildlife.

5.2.2 Case Study B: Individual rancher

5.2.2.1 Background information

Case study B consists of a single wildlife rancher as opposed to an association of wildlife ranchers as was the case in case study A. The rancher started out by buying his first ranch at the age of 22. The ranch was too small to be economically viable (in regards to breeding) and, as a result, became a place of leisure rather than a business. The rancher, an agricultural economist by trade, steadily grew his ranch with the idea to turn away from commodity trading and embrace his passion as a full time rancher. By leveraging gains from his SAFEX trading company he was able to increase the ranch's size in such a manner that the ranch became a financially viable unit.

In order to reach this goal, the rancher focused on marketing his ranch as a safari lodge that catered towards bush getaway for hunters. Wildlife hunting, whilst not the most profitable of endeavours, provided the rancher with a stable and predictable income. In the hope of capitalizing on eco-tourism, many of the ranches across South Africa invested heavily in eco-safari infrastructure during the 2000's. The rancher came to a conclusion that competing with established branded lodges, private game reserves and national parks such as the Kruger National Park was unsustainable. Providing lodging and hunting enabled the ranch to function but not prosper.

The rancher had the ultimate goal of being a full time rancher, and he saw high-value wildlife breeding as the opportunity that could enable him to reach his goal. By leveraging his knowledge as an agricultural economist, his experience as an investment specialist and his client database from the eco-resort, he was able to attract investors interested in investing in high-value wildlife.

5.2.2.2Business Model Analysis

In 2008 the rancher started offering investment opportunities in high-value wildlife to interested individuals. The business model developed by the rancher originally pertained to a minimum investment of R800,000.00 but has since inception grown to a minimum amount of R1.5 million. This minimum is based on the premise that an investor must buy a minimum of

five female animals of a specific species in order to make the investment on the ranchers' part feasible. Considering the association of ranchers grouped the wildlife of various investors together in one camp, the Individual Rancher supplies each investor with their own encampment and bull needed for breeding. The rancher provides an individual camp for each investor where the investors have unlimited access to their animals. Additionally, free accommodation is also made available at the game lodge.

The model is based on the premise of a 50/50 share of the offspring at sale, with a five year minimum period before the investment can be liquidated. Although a contract exists, the rancher approaches this investment opportunity on a partnership basis, whereby the rancher wants investors to take ownership of their wildlife and be involved with the ranch to whatever extent the investors wish. The rancher does this by regularly sending photos, updates and invitations to investors whenever the animals are moved or handled.

As stated, a minimum of five higher-value wildlife females is required in order to justify the capital investment that the rancher has to make to accommodate the investor. If the rancher were to take less than five animals, the herd would be too small to be financially viable and meet the expected animal growth count – especially taking into account that 50% of the return has to be parted with. The capital investment by the rancher includes the high cost associated with exceptional genetics (whether horn length or a specific blood line) in terms of the bull for each investor's herd of female animals. This also includes the infrastructure and labour required to manage and maintain each encampment. The required bull is either bought in the wildlife market (whether on auction or private sale) or, if the right animal is available on farm, it is moved where needed.

As stated, the minimum investment is the rand equivalent of five female animals of whichever species. This minimum investment required is due to the fact that a contractual period of less than five years will limit the multiplication potential of a small herd and ultimately impede the ROI. This is attributed to varying set pregnancy intervals of different species of high-value wildlife. Ideally a herd is at optimal growth potential at female to male ratio of 25 to 1. Due to the capital outlays required as a result of the current market price of these animals; breeding herds mostly consist of less than the optimal number of animals.

At the time of the interview the rancher was of the opinion that the main weak point in his business model was the inability to accommodate investors that wanted to increase their investment in a specific species after their initial investment period started. This is due to the social subtleties within a herd. Wild animals have an established hierarchy and will not accept new females being added to an established herd – especially when confined in small breeding camps. Adding animals to an existing breeding herd could lead to infighting and subsequently injuries or loss of animals. Investors thusly only have one chance to invest in a specific species of wildlife. However, a different herd of wildlife species can be added to the new or established empty camp. This is also known as horizontal diversification as discussed in chapter three (Mayo, 2008:324).

5.2.5 Background: an Analysis and interpretation of Case Study A and B

Every ranch is run differently. Utilizing best practice enables the ranchers to draw upon the experience and lessons learned by other ranchers. Although ranching as an industry has readily established best in-class practices, high-value wildlife investing, as a relatively new industry, does not. This is evident when considering the various different methods utilized by both case studies in regards to how the ranchers manage high-value investments on behalf of investors. Breeding wildlife in isolation and without investor's capital can be considered one-dimensional in comparison to the vast considerations that have to be taken into account when ranchers ranch with foreign capital.

Investment, as discussed in chapter 3 (3.1), entails saving (Botha, Rossini et al. 2010:33). Thus, when investment companies invest the investors' hard earned money, they have to act responsible and in the interest of the investor. In the same manner that investors are responsible for personal financial saving and retirement planning, investment managers are responsible for appropriately managing investments according to regulatory bodies and best practice (Kennon, 2013). Due to the new nature of the high-value wildlife investing there is a lack of best practice or a regulatory body governance.

When both the Association of Ranchers and the Individual Rancher were questioned on other business models that emulate more established investment principles such as discussed in chapter four, the ranchers unilaterally disregarded the idea. Offering high-value wildlife as a

collective investment or unit trust type investment product was disregarded due to the intensive administration and strict regulatory compliance. Additionally when queried about other analysis methods such as NPV or IRR the ranchers did not have the required investment knowledge nor did they see the need to explore further investment analysis methods.

One of the most important limitations to the industry as a whole is the unavailability of external funding when buying wildlife. Purchasing wildlife at auction can only be done if the buyers have the funds available immediately. Another limiting factor to the industry is that wildlife on a rancher's ranch cannot be used as collateral. Furthermore the proceeds or offspring of the wildlife is not considered as part of the payback ability of the lender in order to purchase additional animals.

This stands in contrast to the fact that the animals have an established value and can be re-sold. Banks are especially cautious about the liquidity of these animals in terms of the time it takes to convert the investment to cash and more specifically the time required to sell the animals at an acceptable market price. The weaknesses and disadvantages of the two case studies' approaches will now be discussed in more detail in the following subsection.

5.2.5.1Advantages/Strengths in Case Study A's approach

- The association of ranchers insures all the high-value wildlife at cost to company.
- Their business model does not require the investors to have a high-level of knowledge of the industry. This is attributed to the ranchers managing and maintaining the wildlife on behalf of the investors.
- The business model takes advantage of a new trend that might result in high potential profits.
- Investors do not need their own ranch in order to invest in high-value wildlife.
- Investors do not have to manage labour relations.
- Running costs and capital intensive infrastructure expenditure is not the responsibility of investor.
- Lower capital investment requirements are found in the case of the Association of Ranchers in comparison to that of the Individual Rancher. Whereas the Individual Rancher has a minimum requirement of five females, the Association of Ranchers'

minimum relates to one single female animal, allowing for a lower amount required for entry to an investment in higher-value wildlife.

5.2.5.2Disadvantages/Weaknesses of Case study A's approach

- The association of ranchers groups various investors' animals of the same species in one encampment. This can potentially cause loss of trust and conflict among investors and ranchers when for example; one or more females give birth to a new calve. The new calves are integrated with those of other investors in the same herd and encampment. This can cause an opportunity for conflict and misappropriation, considering that investors would not know which female gave birth to which calve from the same herd.
- Supplementary to the above, the difference in value of female and male calves can be significant depending on the species. Investors might be unaware if their cow gave birth to a higher value female or lower value male, because all the investors' animals of the same species reside in the same encampment.
- Grouping the same species of wildlife in one encampment has drawbacks. When a new investor invests in the same species as in the current encampment (or an old investor reinvests or increases his investment) and an additional encampment is not created it can cause issues within the herd. Furthermore, mixing new animals with established herds is contradictory to best wildlife ranching practice. After a herd has been established, in most cases when additional animals are added it causes disruption in the established dominance hierarchy. This disruption can cause infighting among the females of the herd that can result in injury to the high-value wildlife, and in some cases it can lead to the death of an animal.
- The Association of Ranchers seems to prey on the idea that investors do not have industry knowledge. The association of ranchers ask above the industry/auction prices for investors to invest in high-value wildlife. These above average prices seem to indicate that the Association of Ranchers is using the difference (Investor's price – Cost price = Bridging amount) as a bridging amount in order to cover the cost that the association is obligated to cover in the contractual agreement. This can cause investors to feel "duped," considering that this is not stated to the investor at buy-in.

- Due to the new nature of their business model, their model is based on un-proven trust between the ranchers and the investors. This increases the risk for investors to lose their investment.
- None of the ranchers have a background in investment management.
- In most regards the investment is inflexible, especially considering that an investor is not able to increase the size of his investment once the original investment takes course.

5.2.5.3 Advantages/Strengths of Case Study B's Approach

The advantages stated in the case of the Association of Ranchers also correlates with the advantages of the Individual Rancher, with the exception of the Individual Rancher's approach to insurance. The advantages listed below are unique to the model and practices that the Individual Rancher employs:

- Each investor's wildlife is kept in separate encampments. This results in less infighting among the herd and appropriately mitigates the chance of confusion and conflict that might ensue when a new calve is born.
- Investors are updated on the status of their investments at regular intervals, and may visit the ranch to view the growth of their investments at any time.
- The rancher has a background in investments and is a qualified agricultural economist.
- Full time personnel are responsible to look out for the wellbeing of the wildlife.
- State of the art infrastructure is utilized by the rancher.
- The rancher's ranch is in an area that is not historically disease prone.

5.2.5.4 Disadvantages/Weaknesses of Case Study B's Approach

- A higher capital investment is required (as discussed in the Individual Rancher's background) in comparison to the Association of Ranchers' approach. This required investment amount relates to a minimum investment of 5 female animals. Although this allows investors to have separate encampments whereas the Association of Ranchers groups together investors animals.
- The animals are not insured as in case the Association of Ranchers, although the rancher does grantee the animals for a one year period.

- The contractual agreement states that the investment is fixed over a five year period, which decreases the investment's flexibility. However, the contractual agreement impedes the flexibility of the investment, especially in comparison to traditional asset classes. That being said, the unique nature of high-value wildlife allows the production dynamics of breeding time to exponentially increase the value of the investment.

5.3 HIGH-VALUE WILDLIFE INVESTMENT ANALYSIS AND METHODOLOGY

Appropriate performance and profitability analysis methods are of the utmost importance for any investment. Without appropriate analysis methods, it becomes almost impossible for investors to effectively gauge and compare different investment opportunities. It is then crucial that appropriate analysing methods are employed in order for a new investment option to become a mainstream investment alternative. As investment markets mature; new techniques, tools and methods are developed in order to establish a best practice approach that is both appropriate and effective to that specific market. Investment analysis methods in high-value wildlife is still in its infancy, especially considering that no research has been published pertaining to industry applicable analysis methods. The following subsections pertain to different evaluation approaches employed by the two case studies. The ideas and methods in this section are based on the experience of the two case study participants. It is by no means a complete or best practice approach, but can be seen as a good starting point for consideration in developing an appropriate or best practice approach in further research.

Appropriate analysis methods to high-value wildlife cannot be discussed in isolation. The manner in which a company manages future cash flows, plans for costs and accounts for risks are of utmost importance.

Considering the investment appraisal methodology stated in chapter four and that no academic research is available that pertains to high-value wildlife analysis, this research aims to provide guidelines for the appropriate analysis of high-value wildlife investment. Cash flow projection and investment appraisal analysis is a noteworthy analysis methodology relating to high-value wildlife investment. This is because this method factors various considerations such as negative and positive cash flows, whilst still enabling the opportunity to factor other financial management principles such as inflation, taxation and risk factors in. Analysis of how

companies manage cash flows additionally enables a keyhole view of how management handles and spends funds. This provides insights to the planning of future incomes and potential expenditure that will occur.

Appropriate costing is of utmost importance for any company or individual. When not knowing how much an activity costs, it becomes impossible to accurately determine a return of such activity. When considered from an investment perspective, this rings ever true: hidden and unexpected costs can dramatically erode investment returns and growth over the term of an investment.

When one understands the positive and negative cash flows that will occur within a company, the next logical step is to attribute how a company manages and mitigates the risks it might face. Managing, accessing and mitigating risks are an essential element of investments. By analysing the potential risks involved, the investor or custodian of investments is able to determine whether the investment is appropriate for the given situation. An investment is appropriate given that the investment meets the investor's willingness to assume the intrinsic risk involved. Without appropriate analysis of the risks involved in a given investment situation, investors might be caught unaware of the potential disaster that looms around the corner.

If the intrinsic risks and the potential for returns are understood, appropriate risk analysis can transmute into risk management techniques and strategies that enable investors to mitigate risk. A major consideration when analysing risks associated with high-value wildlife investing is the hybrid interdisciplinary nature of the industry. In order to appropriately address and asses the risks involved, investors need to grasp not only the financial aspects of investing in the ranching industry, but also the operational and ecological risks encapsulated within the industry.

The next subsections will discuss the investment analysis methodology on hand of cash flows, associated costs and risk management methods that the case studies employ, with specific reference to high-value wildlife. The Association of Ranchers will be discussed first, followed by a discussion of the Individual Rancher and finally concluding with the analysis and impact of the various strategies.

5.3.1 Case Study A: High-Value Wildlife Investment Analysis and Methodology

When the Association of Ranchers were questioned regarding analysis methodology they were mostly unable to respond in a data worthy manner. This can in part be attributed to none of the directors having a finance or investment background. One of the directors indicated that the company developed a simplistic excel spread sheet approach that was mostly utilized for marketing and can be seen as their primary investment appraisal method, for both internal and external reporting.

The model employed by the company takes the investment amount into account and forecasts the potential growth that such an investment will reach. The model does this by factoring in the most advantageous circumstances. The model does not factor in the time value of money, inflation or any taxation adjustment. This model can in some regards also be seen as a decision tree analysis of potential future events. The model keeps the value of the wildlife's purchase price as a constant and estimates likelihood of new birth at 80%. Furthermore the values are multiplied by the births to reach an estimated valuation.

The model utilized by the company is a basic representation of a time line of events with what an expert in the field of wildlife ecology described as "attainable but optimistic" calving ratios. The calving ratios are of utmost importance considering this is what equates to the exponential nature of high-value wildlife investing as discussed previously.

The company indicated that with the analysis method employed, they do not factor in price changes of wildlife due to the volatility of the market and the general upwards movement of prices over the last few years. The company stated that they keep the cost price of the wildlife as a constant over the lifespan of the investment and carry over the base value of the animal at year 0 to subsequent new births.

As stated in the literature review, the price of an investment at a given point is equal to the supply and demand equilibrium. This translates to the amount of supply (high-value wildlife at auction or in the market) and the demand (willingness of buyers to buy quantities of high-value wildlife) (Arnold 2007:61). The price or equilibrium underscores the value of an asset or in

this case, the value of the high-value wildlife. Additionally it is important to consider that the price equilibrium does not equate to the intrinsic value/valuation of an asset. Due to the Association of Ranchers not including price changes in their analysis method, a significant shortcoming in their approach can be identified.

Upon further questioning about the effects of inflation on their model of investment analysis, the company responded hesitantly. It is of the researcher's opinion that of the three directors interviewed, none of them had the appropriate background or knowledge to fully comprehend the necessity or effects of inflation in relation to investment appraisal. The lack of knowledge relating to investment analysis was specifically noticeable considering that they did not understand the terminology utilized in the line of questioning, such as inflation, discount rate, weighted cost of capital and net present value calculations. Blatant disregard to the effects of inflation by the association of ranchers either by wilful or unknowing ignorance cannot be underscored, especially considering the potential negative effects and their contractual agreement that states that the ranchers will provide for all the future costs of the wildlife.

The researcher noticed that the directors only responded somewhat in the correct manner after the researcher explained the financial terminology utilized within the questionnaire. After questioning regarding various investment appraisal techniques discussed as part of chapter four (such as *discounted payback* and *net present value)* the company responded that they have not employed or considered any of the analysis techniques that was part of the questioning.

This observation relating to the lack of investment knowledge was specifically noticeable in regards to the concept of price inflation. After the researcher explained the effects of increasing costs on necessary ranching inputs, one of the directors responded that it is their opinion that inflation is a non-consequential factor. In their opinion, this is because the high-value wildlife market has seen a general upwards movement of prices and this appropriately cancels out the negative effect of inflation. This is especially worrying since the ranchers will not incur positive cash flows until expiry of the investment. Additionally they are contractually obligated to cover all future costs.

As stated, the company does not account for growth in terms of prices per unit of wildlife in their model. The company believes that investment growth is attained only by means of new

births. Price increases and decreases in the short term (traditional capital growth as discussed in chapter three) is irrelevant and this, in the opinion of the company, is due to the overall market volatility.

When the Association of Ranchers was questioned regarding the flexibility of their investment products, the company stated that the investment agreement includes a clause that gives inherent flexibility. The agreement states that if an investor wants to liquidate their investment before the agreed upon five year term, they can do so, but are subject to a 10% penalty. Liquidity and flexibility is an important consideration for any investor as discussed in chapter one. The company indicated that due to the formal and informal market and abundance of wildlife agents they seldom have resale issues of wildlife at the right market price. The company stated that buy-in usually takes an estimated three weeks because of translational issues and clearance of funding. This is a weakness to their approach considering that if prices are low at date of investment expiry, investors will most likely have dramatic decrease in expected returns due to the lack of liquidity at the low price.

As stated earlier the company disregards notable financial factors, one such factor not included is the effect of taxations. None of their analysis models or calculation includes potential taxation liability.

5.3.1.1Cash Flow and Costs: Association of Ranchers

The Association of Ranchers does not make use of cash flow projections or analysis techniques for internal or external reporting purposes. The ranchers were further probed in regards to future cash flow short falls with specific reference to contractual obligation to cover all future expenditure. The association of ranchers unilaterally stated that they can liquidate some or all of their share of the wildlife in order to fund the short fall for working capital purposes. This is furthermore a considerable disadvantage to their model especially considering that by taking out females from a herd the exponential growth of the investor's portion of the wildlife also decreases. Furthermore, not one animal is the same irrespective of paternity and the ranchers could in effect strategically sell off the most valuable of high-value wildlife as they see fit. Male animals that are born from the investor's herd are, as stated previously, removed from the breeding encampment and translocated to the larger hunting encampment.

The prices the ranchers ask investors are traditionally higher than the actual cost. The difference between the set amount investors pay in order to invest in a specific species and the actual amount paid by the ranchers for the animals (on behalf of the investors) can for all means and purposes be seen as a bridging amount. This bridge amount is utilized to fund some of the five years of expenses they are obligated to pay contractually. Additionally the bridging amount covers fees such as the capturing and transportation associated with the purchase. This is worrying considering that cost estimation is not financially calculated by the ranchers.

As stated earlier in this chapter, the Association of Ranchers follows a 50/50 birth share business model that is dependent on a five year investment term. The investor provides the seed money for the wildlife and the association of ranchers, in return provides for all the costs, infrastructure and knowledge that the investment might entail.

The company systematically takes all the potential future cost expenditure upon themselves, and these costs are substantial considering that the investment contract states that every animal will be insured at a cost to company. According to the company insurance for wildlife costs between 5 – 6% of the invoice value.

Other notable investment related wildlife costs such as veterinary, nutritional supplements, translocation, global positioning tracking units and disease control costs are the responsibility of the company. These costs are additional to working capital expenditure (labour costs, infrastructure and equipment maintenance) and capital intensive developments such as infrastructure development for potential investors.

When inquired about the cost of an individual animal, the company replied that they do not have an approximate calculation per animal but relate to costs out of a holistic business approach instead. According to the association of ranchers, this is because many of the costs are negligible in their opinion. This is attributed to the use of only semi-intensive breeding practices which is more reliant upon the quality grazing than nutritional supplementation. Additionally, by grouping investor's wildlife together it enables the company to not have to regularly spend on infrastructure development such as water distribution and game-fencing costs.

The company stated that the investment division of their business is integrated into their common plain species ranching/hunting division. This integration is because the company believes that the same basic costs are associated with either common species or high-value species. This statement by the ranchers seemed to not be considered carefully, especially in light of their contractual obligation in regards to insurance of high-value wildlife.

The company explained that the costs of vaccination or additional feed will simply equate to a few extra animals needing uniform care in times of drought or diseases. Furthermore the company stated that costs such as translocation are nullified because they already have the vehicles and trailers needed for translocation. GPS tracking bracelets can simply be exchanged or taken off as is necessary at sale or death.

5.3.1.2Risk Management: Association of Ranchers

Although investments entail risk analysis, the Association of Ranchers stated that they do not partake in risk analysis. It is the company's opinion that risk in high-value wildlife investment can be decreased by investors through diversifying in various high-value wildlife. According to the company, diversifying in various wildlife species enables investors to mitigate negative price fluctuations in specific wildlife species and instead receive cumulative return over the portfolio of wildlife.

This is accurate in the light of the discussion of diversification in the third chapter of this research. Campbell (2012e) states that by diversifying into various asset classes or securities (in this case high-value wildlife), it can decrease the overall investment risk of a portfolio of investments. The manner in which the association of ranchers describes this risk mitigation technique is defined by Mayo (2008:324) as "horizontal diversification". This method would (considering a stable market) decrease the overall risk such as the risk of individual high-value wildlife price decrease. The primary issue of risk mitigation through diversification in high-value wildlife is that this statement is based on assumptions. One of these assumptions is that the market is established and stable, the risk being that assuming a decrease in one species will also see the increase in another.

Although the legitimacy of diversification in high-value wildlife cannot be disputed, the assumptions and the inter-relationships of investment in high-value wildlife can be disputed considering the new nature of the industry and the lack of research (Dry 2010). Unsystematic risk can be addressed appropriately through the use of diversification, but according to Houghton Mifflin (2003a), systematic risk cannot.

Whilst this principle of diversification rings true in financial management, the company was unable to state the perceived relationship between specific wildlife species and fluctuating auction prices. Risk mitigation in the opinion of the researcher is also achieved by the company through tagging and making use of GPS devices that are implanted and attached to the animals. This enables the ranchers to keep track of the wildlife and so decrease the risk of theft. The company stated that they plan to install cameras at strategic points such as water holes for better monitoring. The company also plans to enable these camera images to be broadcast via the internet so that potential and current investors are able to monitor their investments in the wild and in real time.

A notable financial risk is the volatility and uncertainty of future auction prices at sale of the wildlife after the defined five year period. The 50/50 birth share business model that the company employs at sale after the defined period, results in the company and the investors sharing the price risk associated with the investment in wildlife. Alas, considering the new nature of industry the volatility of the high-value wildlife investment market adding to the risk of drastic price decrease cannot be over stated. Arnold (2007:61) emphasizes this because all markets are at the mercy of supply and demand economics.

Whilst the company did not specifically refer to investment risk mitigation and analysis techniques, the researcher is of the opinion that the company does consider risks although they are mostly related to environmental and historical ranching risks. The company stated that because each animal is insured, risk analysis and mitigation is unnecessary. Contrarily, the company actively seeks to discourage poaching, theft, disease and starvation due to drought which in the researcher's perspective does represent risk management.

In the opinion of the Association of Ranchers, insurance is for all means and purposes appropriately applied to mitigate the risks associated with investment in high-value wildlife.

5.3.2 Case Study B: High-Value Wildlife Investment Analyse and Methodology

The Individual Rancher, in comparison to the Association of Ranchers, had a much more complete and sophisticated analysis methodology. This can be attributed to the Individual Rancher having a background in investments. This was evident in the rancher's responses when he was queried on both reporting and analysis techniques. The rancher indicated that he reports bi-annually to investors in a detailed excel spreadsheet that is complete with new births, herd growth and the ROI. When queried about the use of this method, the rancher indicated that it was his opinion that of all the investment analysis methods, his investors understood ROI the best.

Due to the rancher's insistence of transparency and accountability toward his investors, he incorporates many project management and investment analysis principles for internal purposes. A simplified version detailed below is utilized for reporting to investors. The rancher reports tangible results such as new calve births, date of birth and sex of the animal to the investors in the form of an investor's report. The report focuses on financial results by summarizing the estimated value of the investment based on the original purchase prices of the wildlife. Males and females have different values considering that the female animals have the ability to multiply.

The report that the Individual Rancher issues to his investor states the following information:

- The original number of wildlife purchased at auction.
- The date of purchase of the wildlife.
- The original invoice number from when the animals where purchased.
- The ranch where the animals originated from.
- The sex of the animals purchased.
- An estimate value of the animals based on the date of reporting. This valuation model will be detailed further below.

The report issued by the rancher also details the information of the new-born or offspring. The following information is detailed in that section of the report:

- The offspring is cross-referenced to the cow of origin.

- Date of birth of the offspring.
- The sex of the animals born. This section details the amount of male and female animals that were born. Separate values are appropriated to males and females. Males are discounted in the case of Sables to the value of R25,000 in comparison to females' value of R250,000. As stated the value of the females are re-evaluated at the discretion of the rancher based on the valuation model.

Furthermore, the report includes a final ROI calculation that enables the investor to gauge his performance in comparison to other investments. When the rancher was questioned about the revaluation of wildlife the rancher stated that he believes his reports are based on conservative amounts considering the high birthing ratios that the rancher has experienced on the ranch. Revaluation is only based on negative price growth on the original value of the animals, meaning that only when the unit price of the wildlife is below initial investment (per unit) the value would be adjusted. Upwards price movement remains unchanged on his revaluation. The rancher stated that he does this because it offers his investors stable predictable growth as a buffer against price volatility. Realignment of market value would take place when the value is below initial cost of the animal, if this does not happen and price increase continues over time (as they have in the past), investors would see higher than expected returns at maturity of the investment.

As stated, the Individual Rancher indicated that he makes extensive use of excel based calculations and valuations. This sophistication can be seen in the rancher's valuation model, whereby the rancher developed a valuation method based on historic records of auction prices. This enables the rancher to evaluate each animal before the auction in order to determine an approximate minimum and maximum price of each lot and animal at auction. The valuation process utilized is based on set zoological principles that are markers for genetic excellence. These markers include horn length in relation to approximate age, rings on the horn, horn breadth, hide colour and general aesthetics.

A simplified model for quick reference for African savannah buffalo, cross references the spread in inches in comparison to the stated/perceived age of the wildlife at auction. Thereafter the rancher plots historical auction results for the last year and overlays colour groupings, these colours link to an estimate value for a specific amount of inches in comparison to age. At the

date of the field research, the rancher had already included the valuation of 218 buffalo in his model for the year 2012.

Although this model is by no means insignificant in any regards – especially considering it is the only valuation model based on quantifiable information, there are some weaknesses to this model:

- The model only accounts for average animals to mid-high-value animals. As this might seem comprehensive, outliers are not accounted for. This is significant considering the nature of the industry and the historic pretext where some exceptional African savannah buffalo sold in 2012 and 2013 for above R20 000 000 per animal.
- The model is not holistic to the wildlife industry, considering that different species have different horn lengths and angles of spreads.
- Exceptional or unremarkable years in the wildlife market will distort the valuation model, due to the model relying heavily on the last two years of historical data.

The model employed is not based on established financial management principles but rather on zoological principles. This may be seen as a weakness, but can actually be seen as the basic inputs for an appropriate financial model in future. Internal valuation is considerably more complex than that of the Association of Ranchers: the rancher makes use of yearly inflation adjustments on running costs such as veterinary fees, labour, handling fees and other costs. The reporting model calculates growth as part of the herd and the initial capital investment.

According to the rancher, meticulous records are kept of each animal. These statistics are of utmost importance considering that, in his opinion, the more detailed information is made available at auction, the more the wildlife are valued. The rancher keeps statistics such as horn growth and length at intervals of 12 months, 24 months and 48 months for all the investment wildlife species. These records include the birth date, who the father is and who the mother is. The rancher stated that the market and the ranchers' knowledge within the market has developed considerably over the past few years. In previous years older animals could fraudulently pass as large younger bucks and still be sold at high prices. Today ranchers are more wary if there is a lack of information on the auction buy-list. The rancher stated that other ranchers are willing to pay a premium for detailed recordkeeping in regards to genealogy and paternity of high-value wildlife.

The rancher exclusively quotes ROI in regards to reporting to investors. This, according to him, is not because it is the most appropriate analysis tool, but because it fundamentally meets the needs of his investors and is easy to understand. The rancher stated that by using ROI his investors are enabled to compare the return they receive form the other investments with that of their wildlife investment. Although the rancher sees the value in other analysis methodology, he does not make use of it. This is attributed to his investors rarely, if ever, asking for more detailed or complex reporting, nor do they understand it.

For any rancher or investor it is of utmost importance to gauge and understand what their return on capital investments are (Brown & Reilly, 2009:9). The current dilemma is that in a new market such as wildlife investing, calculating profitability and determining an appropriate valuation model is hampered by the lack of research in the field. Downing (2014:68) stated that ROI has become most prevalent analysis model in the wildlife industry, as in the case of the Individual Rancher.

Investopedia (2013i) defines ROI as a measure in which performance can be gauged among various investments. To calculate ROI the return of the investment or gain from the investment (in this case high-value wildlife) minus the cost of the investment (the original animals) is devided by the cost of the total investment. The return is expressed in a precentage.

$$\text{ROI} = \frac{(\text{Gain from Investment} - \text{Cost of Investment})}{\text{Cost of Investment}}$$

In the business model employed by the Individual Rancher this percentage is divided equally among the rancher and the investor.

Whilst this method is valuable considering the many strengths, (i.e. it serves as a standardized metric, ease of use and understanding as discussed in advantages and disadvantages of ROI in chapter four) there are also weaknesses to take into consideration (Guzman 2008). In some cases the weaknesses outweigh the advantages. For example, the ROI does not take the future cash flows into consideration and in doing so does not factor in the time value of money, and also does not account for the costs.

5.3.2.1Cash Flows and Costs: Case Study B

The Individual Rancher stated that he does not value wildlife on the basis of cash flow analysis, although he understands the potential value of using such a technique. Cash flows projection in the rancher's opinion was merely for operational, cash flow and infrastructure planning. The rancher did indicate that it included inflation adjustment of future costs but did not include the use of discounting rates for valuation purposes.

The Individual Rancher believes that the value of a new-born male cannot be estimated before two years of age. The logic behind the Individual Rancher*'s* assumption is that if the parents of the heifer were of superior genetics (bought at auction for breeding purposes), the likelihood of a respectable breeding bull being born would be quite high (considering the value of a high breeding quality male is substantially more than a female).

The Individual Rancher follows much the same model in terms of costs as the Association of Ranchers. The rancher is responsible for the nutritional requirements, disease control, veterinary costs, and development and maintenance of infrastructure costs. Whereas the Association of Ranchers mitigated risk by stipulated mandatory insurance, the Individual Rancher guarantees the wellbeing of the animals to investors for a one year period. After the lapse of the one year guarantee, the exposure to incidental death is carried among the investor and the rancher, considering that they have a 50/50 share of the offspring agreement. This guarantee has been demonstrated by the rancher in the past: the rancher explained how after the investor bought new wildlife one of the animals died after being translocated. The rancher in turn replaced the animal in question to the amount equal to the purchase price.

According to the rancher the primary costs of the company was the creation of infrastructure. These costs entailed the erection of wildlife fencing between the encampments, electric fencing around the edges of the ranch and ensuring that each encampment has ample water supply. Additionally, recurring costs such as road network maintenance and deforestation of encampments are also covered by the rancher.

Cost wise the Individual Rancher has a leaner cost structure as the rancher owns a separate farm close to the primary ranch at which he grows feed such as lucerne (alfalfa) for investors' animals. The feed approximates to two tons a day in order to meet the nutritional requirements for the wildlife. The feed mix of lucerne is supplemented with purchased molasses in order to ensure a healthy mix of feeding for the animals. According to the rancher he supplies ample high quality feed to meet the dietary requirements of the wildlife, to such an extent that irrespective of seasonal changes, drought or available grazing, the wildlife have more than enough feed available.

According to the rancher he pays the farm hands and the ranch manager above industry standards. This is because he wants to retain and reward the knowledge of his labourers. One farm hand is solely responsible for reporting and accounting the animals' wellbeing and safety to the rancher and the manager. This entails twice daily counting and reporting on each and every investor's encampment and the wildlife within.

The rancher, when queried about whether he calculated and estimated cost per animal, replied that he has attempted the calculation in the past but regarded it as a difficult calculation considering all the factors. The rancher estimated the overheads per animal roughly at a cost of between R8 000 and R12 000 per year. The rancher was not able to supply the researcher with such a calculation, but such a calculation cannot simply be generalized for all wildlife species.

5.3.2.2Case Study B: Risk Management

The Individual Rancher summarized risk relating to wildlife investment as the following: the wildlife could die due to unforeseen circumstance, or the price of the species could decrease and so the value of the investment. The Individual Rancher did not make use of insurance such as the case with the Association of Ranchers. However, he mitigated risk to the investor by guaranteeing the animal for one year. This included new births and new investments in high-value wildlife.

The Individual Rancher also mitigated the risk of death by implementing rigorous monitoring of the wildlife whilst constantly maintaining and developing infrastructure. The rancher addressed the risk of theft by the implementation of electronic chips and the use of ear tags on

the wildlife. The geographical location of the ranch, deep in the Limpopo province, also decreases the likelihood of poaching and theft. The ranch utilizes a stringent six weeks inoculation program in the summer and a 12 week program in the winter in order to address the risk of animals becoming contaminated. This program, although stringent, is adapted to address seasonal changes that would affect the wildlife.

5.4 AN ANALYSIS AND INTERPRETATION OF HIGH-VALUE WILDLIFE METHODOLOGY

Additional to the analysis discussed in regards to both the Association of Ranchers and the Individual Rancher, to fully comprehend the industry and its relation to traditional investors (whether institutional or individual), it is important to grasp the appropriate analysis methodology in the high-value wildlife context. The suitability of any analysis method is in question due to the complex nature of the high-value wildlife industry and the lack of research in the field of financial analysis pertaining to high-value wildlife investing.

It is a well-known fact that the value of money is more now, than the value of money in a few years' time. This phenomenon known as the time value of money as discussed in chapter three has a dramatic effect on the returns seen by investors over a period of time. As profits flatten out in the high-value wildlife industry appropriate analysis methods will be of tantamount importance.

According to Cloete (2013:34) and Downing (2014:68) ROI has traditionally been the definitive go-to analysis method for the wildlife ranching industry. Cloete (2013:23) continues to state that there is most likely no right or wrong when evaluating the returns and performance of the wildlife sector. The weaknesses of using ROI as the primary means of analysis has been discussed in this chapter in relation to both case studies, however the discussion did not include the appropriateness of other analysis methods.

ROI entails dividing the expected profit of the investment endeavour, in a specific year, by the original capital outlay. This calculation thusly divulges the nature of the investment performance at a phase where the operations pertaining to the investment is at an advanced financial stage. This highlights the inappropriate nature of ROI as analysis method in the high-

value wildlife investment industry. A new breeding program (as seen in new high-value wildlife investment) is traditionally irrespective of the species and only yields gains or profits after the herd has been established – normally in a period of between two and three years (Cloete, 2013:35). ROI does not factor in the time value of money and could potentially have a drastic effect on the performance of an investment. An analysis method and technique for analysing high-value wildlife needs to be based on sound financial management principles such as the time value of money.

A possible answer to the conundrum of appropriate analysis methodology for high-value wildlife may lie in a holistic approach often utilized as part of financial management in capital budgeting. Internal rate of return (IRR) addresses many of the weaknesses highlighted in this chapter and in chapter four of the ROI method of analysing high-value wildlife investments performance. IRR accounts for the initial investment or cost associated with the investment and appraises the performance of the investment in high-value wildlife over a defined or specific period. By using IRR instead of ROI, the IRR method accounts for the losses in the initial investment establishment phase of buying into high-value wildlife. The advantage of IRR over ROI is, whist still having similar data inputs, the IRR method allows investors and ranchers to factor in "production dynamics" as discussed in this chapter. For ranchers, the calculation inputs do not differ from their traditional ROI calculation. IRR still entails a cost/income calculation in the form of a budget in order to determine the income/profit above their initial investment.

As stated the IRR calculation needs the profits/losses over a number of years in order to appropriately benchmark the performance whereas ROI only takes into account the profit or loss for a specific year. As IRR is not bound by a defined or specific year, the calculation can be utilized over similar time periods as is required by both the Association of Ranchers and the Individual Rancher. These time-periods can range easily from five to ten years and potentially even more. This enables ranchers and investors alike to accurately gauge the performance of their investment in regards to a rounded investment picture. A notable consideration in respect of the period used in the IRR method is that the longer the timeframe, the higher the chance of skewed results due in large to the difficulty of estimating what the price trends will be over time.

IRR enables investors and ranchers alike to re-evaluate the value of their investments in high-value wildlife (in terms of unit value) as they see fit. The valuation of wildlife should be in accordance to a valuation model that is based on historic/current price trends and zoological factors as utilized by the Individual Rancher.

The IRR method of analysis also proves its usefulness when determining the performance evaluation among various species of wildlife. This is evident when considering that calving or lambing intervals at the appropriate age of the maturity can be factored into the calculation, whereas this is not the case for ROI. The issue that arises from using ROI in comparing or considering investments among wildlife species, is at play when determining which stage or year one should compare for the investment yield. This, considering that various species lamb or calve in different intervals.

5.5 THEORY APPLICATION

Analysing high-value wildlife as an investment alternative entails comparing established investment criteria to the observed elements of the high-value investment industry discussed in this chapter. In light of the research objectives set out in chapter one of this research, a benchmark needs to be established in order to analyse this new industry appropriately. This will be done by taking the different investment criteria set out in chapter three into consideration, and incorporating the information devised from the Association of Ranchers and the Individual Rancher as context. Furthermore the limitations and executions of this study in areas of taxation and in-depth agricultural dynamics will also be taken into consideration. Through utilizing the above stated information as well as investment criteria for investment in high-value wildlife, the conclusion regarding income will now be discussed.

5.5.1 Income

As discussed in the literature review and according to Collins English Dictionary (2003) money or positive cash flow is that which is earned or unearned over a defined period. It was concluded that income can relate to steady influx of funds and the income of an investment is inseparably related to the growth of an investment. Swart (2012:241) stated that each investor could have different goals whether it is a fixed steady income or pure capital growth.

Taking the above into consideration, the choice of what happens to new males born from a herd is determined by the rancher in both the case of the Association of Ranchers and the Individual Rancher. In both cases wildlife can produce three different incomes. The first of these incomes is generated through the sale of male animals in order to fund expenditure by ranchers, whilst also providing a 50% share of the sold price to investors. The Association of Ranchers stated that they could sell-off the males of a herd at their discretion in order to create income over the five year period of the investment, elevating potential cash flow issues. A second income can be generated through translocating the males to their hunting ranch in order to fetch hunting industry prices. In light of the above, a third income relates to the maturity of the investment whereby the lump sum is equal to the market value of the wildlife and so the herd.

5.5.2 Growth

Capital growth is defined as the amount to which the earnings of an investment exceed the original purchase price (Swart, 2012:241). The importance of capital growth cannot be underscored enough within any investment context. High-value wildlife investment capital growth relates to, and can be defined by two intrinsic factors of the industry. (1) The exponential growth of a herd of wildlife, whereby the animal continues to breed and so multiplies in order to increase the value of the investment, (2) and due to supply and demand, prices of high-value wildlife are subject to changes in the same manner as in the case of traditional asset classes as discussed in chapter four. Prices of the animals may increase, increasing the value of the herd or the inverse effect resulting in a decrease in the total value of the investment over time.

By observing the wildlife industry, the researcher earmarked an interesting facet relating to the adherence of the industry to supply and demand principles. High-value wildlife ranching, due to its high capital entry barriers, are inseparable from ultra-high-net-value individuals. The individuals can at their discretion retain or hold back wildlife if the value of the wildlife is below their perceived value. This can cause a disruption to the supply and demand principles in the market and result in potential market manipulation. This potential for market manipulation is due in large to the limited investors/ranchers in the market, most of which are

not dependent on the incomes this investment provides. The incomes they provide for many are simply the "cream" from indulging in a passion for wildlife.

5.5.3 Flexibility and Liquidity

The flexibility of an investment is determined by its ability to adapt or respond to changes in the market (The American Heritage Dictionary of the English Language, 2009). Investopedia (2012d) defines liquidity as the ease of which an asset or investment can be sold without effecting the price of the asset. As flexibility intrinsically relates to the speed or responsiveness, if need be, at which an asset or an investment can be liquidated, these terms can then be seen as fundamentally interrelated. In the wildlife context, the high-value wildlife market functions on a formal (auction based) and an informal (private sale) basis. The speed is determined by the price of the wildlife and the estimate valuation/quality that the buyer places on the animal. Both case studies limit the flexibility of an investment by contractually tying in investors for a five year period. Ranchers and investors are limited by their responsiveness in regards to changing prices, because uncertainty in regards to opportunity costs set-in. The opportunity costs associated with selling a cow for a present sum, versus the reducing multiplication effect of a herd over one year's time, weighs heavily on investors. The demand for high-value wildlife can be described as unsaturated considering that there is increasingly more formal auctions year-to-year. Equating to a quantitate value, the liquidity of the industry is not an objective of this study.

5.5.4 Ease of Management

Investments can be categorized into various sub-divisions as stated in chapter three, and one such division relates to the amount of energy needed in order to manage an investment. Both the Association of Ranchers' and the Individual Rancher's models entail that investors need very little active management and can more specifically be referred to as "passive" investments. This is in accordance with the literature review in chapter three considering that investors plan to keep the investment for a substantial period (five years) without being able to change the investment (Erasmus *et al.*, 2003:105; Malan, 2008:48). Investors are not responsible for any of the future costs and by means of risk mitigation through insurance (Association of Ranchers) or a guarantee (Individual Rancher), ease of management ensues.

Contrary to passive investment management, active investment management is when investors are busy managing, adjusting and monitoring their investment (Botha *et al.*, 2010:105). In high-value wildlife investment, this active investment management can be seen in what ranchers are doing in practice. In both cases the ranchers are responsible for the wellbeing, caretaking and monitoring of the wildlife and they are also considered investors because they are also entitled to half of the offspring. Ranchers are actively managing and adjusting their mutual investments in order to achieve maximum returns.

This is indicative of the duality of the wildlife industry, whereby investing in high-value wildlife is both an active and passively manageable investment, depending on the investor.

5.5.5 Knowledge/management requirements

Ease of management of an investment closely relates to knowledge and expertise requirements of an investment class. Making use of professional portfolio managers or investment professionals only transfers the knowledge requirements from the investor to the professional for a fee. The fee in high-value wildlife investment as is the case in both case studies equates to almost 50% of one's investment, excluding the production costs of the rancher.

Appleby (2012) stated that any investor can make a success of an investment if he/she is willing to invest in learning the nature and industry of that investment. This rings true in high-value wildlife investments, as is illustrated by both the Association of Ranchers and the Individual Rancher. As an investment market develops, more professionally managed companies and firms will emerge filling the void of knowledge required by investors.

Considering the duality discussed previously, investing in high-value wildlife does require considerable knowledge and expertise. Animals, unlike shares or bonds, are living breathing beings that require care and nurturing to mature effectively. Combining this with an investment aspect creates a precarious need for required knowledge.

Investors on both sides of this duality need to understand the market and the dynamics of what drives the fundamental value of the high-value wildlife. Understanding this value or valuation

of the wildlife was best approached by the Individual Rancher, where he developed a model to establish a value of the animals before they are bought at auction. The valuation model was based on historical and zoological principles such as the length and breadth of horns, amount of rings and the length of the "pinte" or smooth end part of the horns. These pieces of information and their interrelationships regarding to how the data fits into each other are all needed experience and knowledge for investors to know what they are buying and at what price.

Specific ranching related knowledge is comparable to that of traditional ranching and entails knowledge such as pest and disease control, nutritional requirements and encampment development and management for wildlife. For ranchers who wish to offer high-value wildlife as an investment product, investment related knowledge is a requirement, as it will instil trust and confidence in investors from outside the industry.

5.5.6 Risk and Return

Investors each have their own perspective of the return they expect, and this return correlates with the risk tolerance each investor is willing to assume. Erasmus *et al.*, (2003:98) states that risk is associated with any and all investments, irrespective of the asset class. Correia (2001:3-8) states that there is an inherent trade-off among risk and the return that each investor expects.

Return is a broad term that interrelates to income and growth as it is a representation of the expectation that investors anticipate. In the high-value wildlife investment sector, investors and ranchers alike have received amazing returns in the past due to the new nature of the industry and the inherent growth factors discussed above.

This expectation of return is mostly attributed to an animal's ability to propagate and multiply, as was seen in the Association of Ranchers where the rancher reports primarily the number of the animals and the amount of new-borns to investors bi-annually. The wildlife and its offspring is a representation of the possible return at the end of the period.

Considering the business model that is utilized by both case studies the return that one could traditionally expect is halved in light of the 50/50 share of the offspring agreement among the

rancher and the investor. This reduction in return, whilst significant, is a direct representation of the trade-off that exists among risk and return. Investors transfigures half of their possible return (for the capital invested) in return for the knowledge and infrastructure ranchers offer. This transmutation transforms the investment that would have traditionally been an active investment to one that is passive. The agreement consequently shares the expected return for the investment but subsequently also shares the risk of the investment.

Investment risk defined by Farlex Financial Dictionary (2008) is the uncertainty that future outcomes will vary negatively from the original expectations. By agreeing on the share of the return, investors and ranchers share the risk of the investment not meeting expectations. Investor are exposed to a degree of greater risk considering that they may in actual fact lose the invested capital during possible negative unforeseen circumstances.
Risk, as discussed in chapter three, can be grouped into two different primary categories, namely systematic risk which is the risk that a whole economy, market or industry will be effected by an event, negatively effecting the value of an investment, and unsystematic risk which relates to "specific risk" affecting small number of assets or specific species of high-value wildlife.

Within the wildlife industry, systematic risk can be seen in an event that will cause the value of all the species (asset classes) and by implication the industry, to free fall – negatively affecting the entire market. This risk is associated with all new markets. The risk that the entire industry might be a proverbial bubble was echoed in the Finweek article whereby Willie du Plessis (2012) stated that the growth of game prices over the last few years has been frightfully high. He continues to state the average of a 50% increase in wildlife prices was observed since 2010. Du Plessis (2012), the director of agricultural banking at Standard Bank, echoes the woes of an industry in which he questions the sustainability of the status quo of the market. This article highlights the potential of systematic risk bringing the new industry of high-value wildlife to its knees. The nature of systematic risk makes it virtually impossible for investors and ranchers to protect themselves against such an event.

Unsystematic risk effects smaller segments of an industry, and in high-value wildlife this risk might be associated with a specific event such as disease, theft or death of the animals. This risk is mitigated by the Association of Ranchers by assuring investors that all the high-value

wildlife is insured and will be covered by an insurance company if a catastrophic event should arise. The Individual Rancher guarantees investors on all new births and purchases for a one year period, and in his opinion this covers the wildlife when they are most vulnerable. This aspect of the investment resonates the unique nature of this new asset class that is high-value wildlife. The advantage of being able to insure/cover one's investment in such a way, is a major advantage over other asset classes. In theory it can result in investors doubling up on invested capital within year one, with specific reference to investment in a pregnant cow, all whist still being able to have insured cover for both animals. There are very little asset classes of investments that offer this advantage coupled with the same liquidity as in the high-value wildlife market.

Whilst insurance can be considered a blanket cover for many environmentally unsystematic risks related to the wildlife industry, it does not negate the risk of possible negative price fluctuations. This price risk poses the most likely of risks affecting investors in high-value wildlife, as dramatic price decreases and value of the animals will undermine the investment. This risk is shared among the investor and the rancher in both case studies due to the sharing of offspring stated in the contract. Individual ranchers specialising in high-value wildlife will be exposed to this risk independently if ranching alone.

Unsystematic risk can be countered and mitigated by appropriate diversification according to Houghton Mifflin (2003). Diversification will now be discussed in more detail.

5.5.7 Diversification

Both case studies indicated that risks could be mitigated by investing in various species of high-value wildlife. This rings true considering the assumption that the market is stable whist still developing and is not exposed to great amounts of systematic risk. Systematic risk cannot be diversified away as discussed, but unsystematic risk such as the risk of a species value declining in relation to other species can. Diversifying one's portfolio of investments is one of the most established means of reducing risks in the investment sciences.

Farlex Financial Dictionary (2012) defines diversification as an act or a strategic approach to adding other investments to an existing portfolio in order to hedge/protect against risk such as

price volatility. Campbell (2012g) stated that by utilizing diversification, investors can diminish the overall unsystematic risk of the portfolio and avoid damaging the overall performance of the portfolio.

Diversification of a portfolio of high-value wildlife is not as easy as in traditional investment. Production, zoological and ecological dynamics all play important parts in establishing a harmonious synergy among wildlife whilst still appropriately hedging risk. The Individual Rancher stated that in his opinion the best means of diversification is by having both high-value and common plain species (that has stable market with lower margins) in association with high-value colour variant's whose prices are higher and more volatile but potentially more profitable. An example of this diversification is by ranching with sable antelope and black impala in the same encampment.

A major consideration in regards to diversification is the cost of diversifying. Due to the high capital requirements of purchasing the high-value wildlife, the act of appropriately diversifying is very expensive. The Association of Ranchers best offered the chance for investors to diversify their investment, considering that investors were limited by only a single animal purchase, granting investors the opportunity to potentially diversify in various species more cost effectively than in the case of the Individual Rancher. The Individual Rancher had a five female animal minimum in comparison, dramatically decreasing the investor's ability to diversify. Whilst diversifying in high-value wildlife species is a valid risk mitigation mechanism, the sheer cost of doing so is only available to the select few who are able to afford it.

5.5.8 Amount, Term of the Investment and Timing

The amount and term of an investment are the basis for the performance and potential growth related to the investment (Swart, 2012:242). The amount an investment refers to is the available funds the investor can dedicate to the endeavour of the investment in high-value wildlife. As stated in chapter three an amount of the investment can relate to a single lump sum or smaller payments over a period. In both case studies the amount of the investment relates to a single lump sum. Breeding dynamics limits the opportunity for investors to reinvest by means of recurring amounts and note of the case studies offered a lone based investment product.

The amount as stated earlier in this chapter is determined by the quantity of high-value wildlife sought. In the case of the Association of Ranchers the amount is equal to a single animal based on a price stated by the ranchers, whereas in the Individual Rancher's case the amount is determined by the auction price of the five females that are the minimum for the investment. The amount of the investment dramatically effects the economies of scale, in regards to returns which an investor can expect, considering that a larger once off investment will over time grow exponentially due to the nature of breeding multiplication.

The term of the investment as a general rule according to Campbell (2012h) determines the rate of return of an investment. Both case studies work on a term of investment of five years, and this in their opinion is the minimum in which they as the ranchers can recoup the costs associated with the endeavour and make a profit. The term of an investment in high-value wildlife is dramatically affected by the length of the term of investment, and this is due to set pregnancy intervals of the various wildlife. If the term is shortened the investors would potentially lose out on a new birth of a new calve.

Timing relates to a point in an investment market where the value of the assets, in this case wildlife, will hit a high or low point indicating the appropriate time to buy or sell. The market of high-value wildlife is a market driven by rarity much like the investment market of rare books, collectables and art. If a new colour variant appears in the market, due to its scarcity, the market would automatically put a premium on the animal in comparison to the current offering within its species. This is indicative of trends in the market whereby prices increase gradually over a few years to exurbanite amounts and crashes as was seen in 2013 with golden blue wildebeest.

The correct timing of these trends can result in incredible profits but can also lead to investors not attaining their expected returns due to "cashing out" too late. The value of high-value common plain species such as sable or roan antelope are not as volatile as colour variants, and the price of the animals are more driven by their distinctive characteristics such as exceptional horn length than their scarcity.

5.5.9 Safety of Capital

The safety of capital relates to the capital invested in wildlife surviving and not diminishing below the initial amount invested. The Association of Ranchers systematically insures all the high-value wildlife of investors, guarding against the dramatic loss of capital below the initial amount. The same cannot be stated for the Individual Rancher who only offers a one year guarantee. The safety of one's investment in high-value wildlife is only at risk in the event of systematic factors such as total collapse. In case of no insurance, unsystematic risk such as price risk may negatively affect the value of an investment, but this will be mitigated by breeding nature of the investment. The initial cost will be recouped in case of drastic price decrease over the following new generation that is born.

5.5.10 Transaction Costs

Transaction costs pertaining to investment in high-value wildlife, much like traditional investment, relates to costs incurred whilst conducting an economic transaction. In the wildlife industry the two predominant transaction costs are the capture and the translocation of the animals after purchase. In both case studies these costs are covered by the ranchers either by utilizing an independent company or by translocating and capturing the animals by themselves.

5.5.11 Control

Control of an investment closely relates to the ease of management discussed earlier in this section. Each investor decides the degree of control they wish to have over an asset. In both case studies the ranchers let the investors determine at their own discretion the amount of involvement that they wish to have. The management control of the investment is in actual fact in the hands of the ranchers and not in the hands of investors. In both cases the agreement states that the investment is co-owned and so in any major changes both parties have to agree on the course of action. Independent investors/ranchers have full control of the investment.

Investment in high-value wildlife can be hugely profitable for investors. According to the criteria of investments discussed above it becomes clear that high-value wildlife can be

considered an investment and warrants the analysis that is found in traditional asset classes. Whilst this research cannot be seen as a complete analysis of high-value wildlife in regards to analysis techniques and methodology, it acts as guidelines and important considerations for investors and ranchers alike. This highlights what future investors need to consider when investing in the new and highly profitable alternative investment that is high-value wildlife.

5.6 CONCLUSION

Both case studies were unable to address the best practice analysis principles that are found in comparison to traditional investment management. This was addressed by including detailed application of literature review subject matter and incorporating financial management principles in the context of high-value wildlife investment. The information gathered from the case studies' shortcomings, although evident, highlights the young developing nature of the high-value wildlife industry as a unique new asset class. Furthermore the shortcoming in their analysis methods are in part due to the lack of published research and awareness pertaining to high-value investing. This emphasizes the need for appropriate guidelines relating to the evaluation (quantitatively and qualitatively) of high-value wildlife investment. Ultimately this justifies the approach, methodology and subsequently the need for this research in high-value wildlife.

The next chapter will conclude this dissertation by summarizing the body of the work and drawing final conclusions from the research presented in the previous chapters. Finally, each research question will be discussed and brought into context with the previous chapters. In doing so, the objectives will be adhered to by relating to how they were addressed on hand of the case study information in chapter five.

CHAPTER 6: SUMMARY, CONCLUSIONS AND CONTRIBUTIONS

6.1 INTRODUCTION

The wildlife sector is a part of the wider agricultural industry historically composed of hunting, conservancy and tourism. Recent developments in high-value wildlife breeding have seen the establishment of an investment opportunity being offered to potential investors, alternative to traditional investments such as shares or bonds. These recent developments in the wildlife sector, with specific reference to the investment opportunities being offered to investors, coupled with intensive breeding practices, have created new market dynamics within the sector.

Investors' capital is being utilized in order to stimulate breeding of high-value wildlife species. Through this opportunity investors can enter a lucrative market which has proven to date to be highly profitable, generating above average returns when compared to traditional investments. As this initiative continues to develop and new investment opportunities arise, the need for contextualization and analysis of the investments and the wider aspects of high-value wildlife based on sound financial management principles is becoming more apparent.

This study aims to establish the validity of high-value wildlife breeding as an investment alternative whilst contextualizing the wider high-value wildlife breeding sector. The investment options currently offered to investors and the developing high-value wildlife breeding sector is an uncertain grey area within the larger investment industry. The lack of research in the field of investment pertaining to investments in high-value wildlife, as well as the high returns received by ranchers/investment providers and investors underpins the need for academia to contextualize the industry and the options available to investors in order to further the body of knowledge. As more investors consider and invest in this new developing initiative, effective and appropriate guidelines needs to be developed that offer a means of

analysing and comprehending the many factors that govern the high-value wildlife investment landscape.

In order to validate investing in higher-value wildlife and factually classify this economic activity as an investment alternative, a set of criterion and characteristics need to be established. This research addresses the above by means of detailed literature review and case study approach. This enabled this research to gain specific industry insights from established higher-value wildlife ranchers in the wider investment industry context. The investment principles discussed in the literature reviews (chapter three and four) are applied to each case study for a comprehensive analysis of investment in higher-value wildlife in chapter five. This acts as an important aid in the contextualization of higher-value wildlife as a viable investment alternative within the broader investment landscape. Creating context and validating high-value wildlife as an investment alternative is the core of this research, ultimately enabling this research to provide investors with guidelines that can result in better more informed investment decisions being made.

6.2 SUMMARY OF CHAPTERS

Chapter one focused on creating context by means of background information and highlighting the need for a study regarding the analysis of high-value wildlife as an investment alternative. As stated new developments within the wildlife ranching industry resulted in ranchers offering investment opportunities to investors. The investment offered by ranchers focused on high-value species such as disease-free buffalo, sable and roan antelope as well as colour or morphological variants species such as black impala and golden blue wildebeest. The chapter continued with the formulation of the problem statement, highlighting the need for comprehension of high-value wildlife breeding as an investment alternative and setting clear objectives in order to address the problem statement. These research objectives were discussed in detail in the following subsection. The sub-section focuses on how the research objectives were achieved and what information and recommendation could be made by analysing the literature reviews and the case studies. The scope of the study in chapter one highlighted some limitations to the study and discussed the field of the research being undertaken, later sub-sections in this chapter elaborated on the limitations and exclusions of this study. A brief

summary was also included in the first chapter, regarding the means by which the literature review and the empirical study was to be approached in the following chapters.

Chapter two was an elaboration of the summary of the empirical study discussed in chapter one and performed in chapter five. The chapter detailed and analysed various research methodologies and designs that could be utilized to address the research objectives. It was concluded that the appropriate methodology to address the topic was the case study approach, whereby investment companies/ranchers whom offer investment products in high-value wildlife was to be analysed. The information was to be gathered by means of semi-structured interviews that were based on sets of interview guidelines set out in addendum A. The sample consisted of two investment companies/ranchers that formed the basis of the case study. The justification for the limited case studies was rooted in the lack of willing and available subjects, and this is due to the new developing nature of the investment products and companies in the industry.

One of the fundamental sections in chapter two discussed the rationale for the chosen methodology and design on hand of intrinsic constraints or limiting factors of the wildlife industry. These factors or constraints consisted of the lack of published or academic research material, the lack of reliable data, lack of investment related knowledge or expertise within the wildlife industry and secrecy and scepticism of ranchers to divulge information. This chapter consisted of a theoretical discussion regarding the appropriateness of the chosen methodology and design that was implemented in chapter five.

Chapter three comprised of a literature review and a discussion about the nature of investments specifically regarding aspects such as: differences among active and passive investments, financial versus real asset investments and the investment process. High-value wildlife investment have both active and passive characteristics, investment in high-value wildlife as seen in the two case studies in chapter five highlights that high-value wildlife can be passive investment whereby knowledge and infrastructure can be “outsourced” to ranchers. High-value wildlife can also be seen as an active investment, when who ranchers invest in high-value wildlife and the responsibility for the investment falls squarely upon them. The ranchers are responsible for the development and maintenance of infrastructure whilst also caring for the

animals in terms of nutrition and veterinary needs, this highlights that the investment can be laborious and need large amounts of active management.

Chapter three continued to discuss the investment process and steps as set out by Erasmus *et al*., (2003:102). One of the cornerstones in this study was a detailed discussion regarding a set of investment criteria or characteristics that act as a test of validity for investments in high-value wildlife. The last subsection of chapter five was the application of the theory laid down in chapter three pertaining to the investment criteria. This subsection discussed in detail how an investment in high-value wildlife correlates to the investment criteria. The investment criteria discussed are as follows: (1) income, (2) growth, (3) flexibility, (4) liquidity, (5) ease of management, (6) risk, (7) return, (8) amount, (9) term of the investment, (10) safety of capital, (11) transaction costs, (12) timing, (13) diversification, (14) control, (15) knowledge/management requirements and (16) inflation. The chapter was concluded with a detailed discussion of risk and return of investments.

In chapter four, investment options and investment analysis detailed various traditional and established investment markets such as the money market, equity or capital market, collective investments and the bond market. The theoretical discussion of various established investment markets was concluded to ultimately contextualize high-value wildlife investing in the larger spectrum of investments. This led to logical conclusions regarding high-value wildlife investing in comparison to established investment options. The chapter concluded with a detailed discussion of various investment analysis techniques on hand of advantages and disadvantages, with the hopes of formulating appropriate analysis guidelines for investors.

Chapter five consisted of the documenting and recording of the information gathered from the two case studies. The line of questioning was based on interview guidelines (see addendum A) and resulted in clear defined categories of information. The case studies were discussed along with each case study's background, detailing their individual business models and different modus operandi. Analysing the case studies' background information as well as their perceptions and assumptions about high-value wildlife investment helped define investment do's and don'ts whilst contextualizing the high-value wildlife industry. The chapter continued with an analysis and discussion of each case study along with the advantages and disadvantages of the predominant return on investment method of investment analysis used in the wildlife

industry, and the recommendation of the IRR method based on its intrinsic advantages. Furthermore, the chapter discussed in detail, on hand of the investment criteria set out in chapter three, the high-value wildlife investment industry.

This chapter is a summary of the six chapters and acts as a link to the three primary objectives set out in chapter one. The three primary objectives will be discussed in context of how they were achieved together with a summary of the information gathered in chapter two, three and five. The summary of the objectives focuses on highlighting how the gathered information relates back to the three primary objectives. The concluding sections of the chapter discusses the contributions of the study, as well as future research opportunities pertaining to high-value wildlife as an investment alternative.

6.3 RESEARCH FINDINGS

The three primary objectives of this study as defined in chapter one of this research were:

Objective 1: Analysing and contextualizing the developing high-value wildlife investment landscape by researching current trends, best practice analysis methods and determining to what extent investment and financial management principles are taken into consideration.

Objective 2: Determine whether an economic endeavour by investors in high-value wildlife can be considered as an alternative investment by analysing this type of economic endeavour against financial and investment principles, criteria and characteristics that established investments adhere to.

***Objective 3*:** Developing clear, appropriate investment guidelines based on sound financial management principles tailored for investors who wish to enter the high-value wildlife investment landscape.

The following section is a discussion of how this research met the objectives as stated above and in chapter one. This section acts as a summary of the conclusions and recommendations that was logically drawn from the information gathered from chapter one, three, four (literature reviews and background) and five (case study empirical research).

6.3.1 Objective 1: Contextualizing High-value Wildlife as an Investment Alternative

High-value wildlife breeding as a new and developing initiative within the wider wildlife industry is earmarked with many of the characteristics that are seen in new investment markets. The lack of understanding and comprehension of the factors that govern the underlining value of the investments highlights the need for wider contextualization of the industry.

Chapter one provided detailed background of the overall high-value wildlife market, while chapter five continued with creating background and context by means of two case studies. From the case study background information analysed in chapter five, the researcher was able to contextualize and create understanding regarding the modus operandi of ranchers and their investment opportunities offered.

High-value wildlife breeding and consequently high-value wildlife investment was the result (according to the case studies) of ranchers seeking higher profit margins than was previously offered form traditional eco-tourism and hunting activities. High-value wildlife as an investment product offered to investors was conceived from the rancher's need to have access to capital to stimulate the growth of their ranching businesses. Ranchers' access to capital was impeded by financial institutions, due to high-value wildlife not meeting the requirements of collateral for loans and the future proceeds not being regarded as part of the rancher's payback ability. Banking institutions hold the belief that the high-value wildlife market and subsequent prices of the high-value wildlife are too volatile. Their unwillingness to provide funding is based on the premise that banks are not able to accurately estimate or understand and quantify the risk factors entailed in the industry. This highlights the lack of understanding of this new asset class and the wildlife industry by the wider investment community.

High-value wildlife as an investment is offered by ranchers as seen in case study A: an association of ranchers and case study B: single rancher to investors by means of a contract. Investors purchase female high-value wildlife at auction, the animals are then left in the care of the rancher. The contract (in both case studies) stated that in return for their knowledge, expertise and infrastructure whilst in the care of the rancher, investors sacrifice half of their

offspring when the defined period has lapsed. This defined period is a minimum of five years, and investors have the opportunity to reinvest after the maturity date of the investment. Reinvestment can take place by contractually agreeing on a new defined investment period. Ranchers also agree to cover all the costs associated with the investment after purchase. In case study A additional insurance is purchased for all the investors' wildlife whereas case study B only provided a guarantee of one year.

It was concluded from the case studies that high-value wildlife investment is still in its infancy compared to traditional investments. It was observed that the ranchers as the custodians of the investments are not to be held accountable to investors due to the lack of sound financial management principles. Only case study B reported to investors bi-annually, although performance or return reporting to investors are not as developed in nature in comparison to traditional investments. The ranchers do not factor in elements such as inflation and do not make use of sophisticated investment analysis methods. It was observed that ranchers do not make use of any cash flow based or discounted cash flows analysis methods and rather opt for only ROI.

The context provided here with regards to high-value wildlife as an investment alternative cannot be seen in isolation from the other objectives of this study and the information provided in the previous chapter.

6.3.2 Objective 2: Establishing the Validity of High-value Wildlife as an Investment Alternative

Assuming that all economic activities need to pass a theoretical test in order to qualify as an investment, such a test would be based on a set list of criteria or theoretical framework of characteristics intrinsic to all investments. The criteria discussed in detail in chapter three was researched as part of the literature review and applied in chapter five. It was gathered from this criteria that high-value wildlife breeding can indeed be considered an alternative investment to more traditional or established investments.

The validity of the investment in high-value wildlife is attributed to its ability to generate income and offer growth of capital to investors. Investors (ranchers, individual or institutional)

can expect capital growth by means of upwards price fluctuations as seen at auction, and this growth is similar to traditional investment growth that can be seen in equity shares, bonds or other investment market detailed in chapter four. Price fluctuations of wildlife can primarily be attributed to normal supply and demand economic dynamics as seen in other investment options. One of the primary advantages of an investment in high-value wildlife (as echoed in the case studies) is the inherent ability of animals to reproduce. As wildlife reproduce, the growth potential of the herd and thus the invested capital multiplies as new female animals become productive. This is inherently unique and advantageous to this new asset class, as no other investment option has the ability to multiply to this extent. The capital growth offered by investment in high-value wildlife can be likened to dividends of shares being reinvested, but continuingly creating capital growth though price increases whilst also providing offspring and by implication, investment value growth at an exponential rate.

The flexibility of an investment in high-value wildlife is determined upon the nature of the agreement of the investment. Investment options as offered by case study A and B are not flexible, as the agreement defines a minimum of a five year period with little or no way out. These examples can be compared to fixed deposits where investors are not allowed to extract the funds for a defined period of time. An added disadvantage to an investment in high-value wildlife is the partial lack of overall liquidity for investments: the investment is not illiquid, but is reliant upon irregular formal auction or informal buyers being found when considering liquidation of the investment. The informal market has developed to a large extent over the last few years, whereby wildlife agents actively seek buyers for investors/ranchers for a commission. Commission based agents and irregular formal auctions as observed in high-value wildlife investing is similar to that of other investment classes such as the real estate or collectables. Due to the lack of electronically traded exchanges, the investment is not as liquid as other traditional financial investments such as shares or bonds.

As with all investments, a degree of knowledge is required in order to generate success. High-value wildlife investing or breeding does require large amounts of industry specific knowledge and skills. Both case studies highlighted that this knowledge can be outsourced to professionals that have the required skills and knowledge if investors do not have the necessary knowledge, and this is done for a fee equal to half of the offspring. This can be compared to collective investment schemes whereby investors entrust their capital to professionals to manage and

grow for a fee or commission. The fee payable to ranchers (half of the offspring) for providing the same service is exorbitant in comparison to unit trusts and highlights the intensive management and knowledge requirements of this asset class.

One of the hallmarks of investing in high-value wildlife is the high capital requirements required to enter the market. This entry barrier is significant considering that it also requires a long investment horizon in order to optimally maximise the return potential of this asset class. The rewards for investing in this new sector does outweigh the risks associated with such investment as discussed in chapter five. Risks in this investment can be significantly mitigated, to a much larger degree than other investment classes, especially considering that high-value wildlife can be insured. Insurance equalizes high-value wildlife as an investment to other traditional investments as it mitigates the risk of death of the animals.

The process of investing in high-value wildlife corresponds with the investment process discussed in chapter three of this study. Investors in high-value wildlife need to establish an overall investment policy whereby they detail their needs and expectations based on their own intrinsic objectives and constraints. High-value wildlife should form part of this investment if they deem it fit, as the model suggests high-value wildlife investment needs to also change over time and adapt to changing economic and market factors. Investors should keep informed and gain industry knowledge such as changing market trends and wildlife auction prices. This will enable them to predict future trends better and mitigate market risk by being able to adapt to change. The next step in the investment process is to construct a portfolio of investments; the idea of portfolio compilation is to spread risks among asset classes, instruments and across borders. Within an investor's portfolio of high-value wildlife investors can diversify within the various wildlife species and so gain market diversification. As with all investment markets, change is inevitable and so high-value wildlife investors need to monitor, adjust and adapt their investment policy to reflect the changes in the market and changes in investment strategies. The portfolio of wildlife investments should be regularly compared and re-evaluated based on the investor's expected return without negatively impacting their investment.

Investors in high-value wildlife need to be able to identify among the high-value wildlife alternatives within the market, each specie as with shares have their own unique attributes and traits. Certain species reach sexual maturity quicker and other are able to reproduce more

frequently. Factors such as these will greatly affect the performance end result of one's investment as they will determine the cash flow dispersion over time. Understanding the monetary consequences of alternative species will enable investors to make better investment decisions and ultimately lead to higher profits.

After careful consideration, it can be concluded that high-value wildlife breeding can be considered as an investment alternative to traditional established investments. The investment has the potential to be highly profitable albeit risky due to the developing nature of the industry and the high entry barriers. Whilst high-value wildlife can be considered a "good" investment for investors with the appropriate risk appetite, it should be integrated as part of a well-diversified portfolio.

6.3.3 Objective 3: Guidelines for Investing in High-value Wildlife

The following investment guidelines pertains to investment in high-value wildlife, the guidelines were gathered in the analysis of the cases study information in chapter five. This list of guidelines is not complete in nature, but acts as a starting point of factors investors (rancher, individual or institutional) should actively consider. Various guidelines were highlighted in chapter five by means of advantages/strengths and disadvantages/weaknesses of case study A and B. The following is a summary of important factors investors need to consider when investing in high-value wildlife.

- ***High-value wildlife is not a short term investment.***

In order for an investment in high-value wildlife to reach its full potential, the herd of wildlife needs to be left to grow and accumulate. It was concluded from the case studies that the minimum investment horizon is 5 years. This is due to the nature of the investment. High-value wildlife (as animals) need to be left to mature in order for them to be able to propagate, much like humans. As the age of sexual maturity varies among each wildlife species, investors need to actively consider what species they are investing in as it may greatly determine the investment term and consequently their return. If an investor removes or liquidates some of his wildlife it will greatly affect the capital growth potential of the investment. When a female (a productive unit) is removed from the herd, the growth potential of not just one animal is removed from the investment but all the future offspring's potential growth as they could have

become productive units. In order for investors to achieve the maximum potential returns his investment herd might offer, the herd needs to be have left to mature and grow as long as possible. Each investor is different and each have their own goals; investors have to factor in their expected return when deciding in what species they wish to invest in, as the higher the expected return the longer the investment horizon will become.

- ***Different investors' wildlife should be in separate encampments.***

Case study A: Association of Ranchers made use of one single encampment for a specific specie of high-value wildlife. This can cause confusion since investors would not know whether their females gave birth in comparison to another investor. Case study B: Individual Rancher rather implemented a more appropriate, albeit more expensive and capital intensive model whereby each investor has a separate encampment. The separate encampment instils trust among the investors where they are assured that other investors' wildlife cannot be confused with theirs and vice versa. Investors should seek and insist to always have their own encampment as it will also decrease the possibility of fraud by the rancher.

- ***More information regarding an animal results in higher auction prices.***

Meticulous records should be kept in regards to the statistics of the high-value wildlife. The nature of the breeding industry is that other investors and ranchers are willing to pay a premium at auction for wildlife which have detailed records of the age, paternity, maternity and horn details. Accurate historical information regarding birthing intervals will also result in more accurate forecasting of potential growth of the herd. Accurate birthing interval information of the females in the herd will over time result in a growth pattern whereby ranchers and investors will better be able to predict the potential growth over an investment horizon of their investment.

- ***High entry barriers.***

The barriers of entry for investors are very high and unattainable to the masses, this is due to high capital requirements of purchasing the ranch, establishing the needed infrastructure and purchasing of the initial herd. Skill, knowledge and leadership is also a barrier considering that the ranching industry is hallmarked by the lack of academic institutions catering and educating by means of industry specific skills. Economies of scale regarding the growth potential of a herd is primarily dependent upon the initial investment amount. The more spent on establishing

a larger herd in year one, the higher the growth potential of the herd and the resulting return. Case study A: Association of Ranchers offered a lower entry barrier in comparison to case study B: Individual Rancher into high-value wildlife investing. The former had a minimum of one female animal whereby the latter had a minimum of five female animals that investors needed to purchase. This is primarily attributed to the varying costs involved among the different business model approaches of the two case studies. Case study B: Individual Rancher stipulated that each investor will have his own encampment (more costly infrastructure expenses) and cases study A: Association of Ranchers grouped together investors' wildlife in one encampment requiring less capital outlay. Case study A: Association of Ranchers requires a one female animal minimum that translates into R300,000 plus investment, case study B: Individual Rancher consequently requires five times that investment. A R300,000 plus investment (in a single asset class) is not attainable to every investor in South Africa but the wealthy investor who can invest more capital and consequently more wildlife will over time reap the return.

- ***Appropriate analysis methods needs to be utilized.***

ROI was identified to be the most predominant analysis method implemented by both case studies. Chapter five indicated that ROI is not the best means of analysis and IRR should alternatively be used due to its intrinsic advantage. Investment can be analysed in various methods but the analysis method should account for inflation adjustments appropriately whilst accounting for potential costs that may be incurred over the lifetime of the investment. The time value of money should also be accounted for through the analysis process. The method should also allow one to compare an investment in high-value wildlife to other investment opportunities. It was concluded that the IRR method offers a more appropriate basis to compare investment opportunities than ROI.

- ***High-value wildlife investment as an investment alternative is still developing***

Whilst the profitability of the investment in high-value wildlife cannot be called into question, based on historical price growth as discussed in chapter one, the sustainability of the growth in prices can. The prices of high-value wildlife will not in perpetuity grow as was seen in the past, investors have to include the potential stabilization, plateau or realignment of the sector's prices in their investment analysis. However, due to the lack of available information and research, quantifying or predicting such events is extremely difficult. Investor's need to stay informed

about sectorial changes and developments and can adjust their expected return upwards in order to compensate for the uncertainty.

- ***Appropriate valuation model unique to each species of high-value wildlife***

The prices of wildlife at auction is arbitrarily estimated and the value is based on the perception of value that investors estimate at auction. Case study B indicated that he developed a valuation model to establish the inherent worth of an animal at auction. This model was based on zoological characteristics such as horn spread and length and cross referenced historical auction prices. This enabled the rancher to analyse and estimate the value of the animal at auction by establishing a maximum and minimum price he was willing to pay for each animal. Investors and ranchers should develop and make use of such a valuation method unique to each high-value wildlife species. This will result in better investment decisions being made and potentially result in higher returns.

This section acts as a summary of the observations and recommendations discussed in chapter five. As stated earlier, this list is not exhaustive but accounts for the most important considerations that investors need to consider.

6.4 CONTRIBUTION

The first contribution of this study lays in the very nature of the chosen topic. High-value wildlife as an investment alternative is still in its infancy and the entire market segment is developing as a whole. The contribution lays in the fact that no academic research pertaining to high-value wildlife analysis (on a qualitative or quantitative level) has taken place in the past. Wildlife as a research topic has only seldom been academically addressed in ecological, zoological and agricultural economic related research in the past. Wildlife, or more specifically high-value wildlife, has never been research academically in regards to financial management or investment related principles.

This lack of published research and clear guidelines for investing in high-value wildlife is especially worrying in the South African context whereby Dry (2012) estimates that there are 10,000 commercial ranchers. Based on the sheer number of active commercial ranchers and R7.7 billion approximate GDP contributions of wildlife, the need for research is undeniable.

The second contribution of this study is that it is the first academically researched text that aims to provide holistic investment and financial management guidelines and understanding of the lucrative and developing market that is high-value wildlife. This was done by incorporating in-depth literature reviews on investments (chapter three and four) pertaining to the analysis and nature of investments and a formal academic case study approach. By combining the literature review and the knowledge and information gathered through the case studies, this research was able to provide industry related contextual recommendations based on sound financial principles. The investment and financial management guidelines offered by this research to ranchers and investors (individual and institutional) alike can potentially form the basis for creating a complete and industry related analysis framework.

The third contribution of the study is that it offers the first qualitative analysis for investment in high-value wildlife. As with all new and developing markets and industries, knowledge and understanding is in short supply. Chapter five provides in-depth industry context and background that contributes to the body of knowledge for investment, financial management and agricultural economics fields of study.

6.5 LIMITATIONS OF THE STUDY

The most predominant constraint to this study, although stated numerously throughout, was the unavailability of research and literature pertaining to the topic of high-value wildlife as an investment alternative. The limitations and constraints of this study was extensively discussed in chapter two, whereby a rationale for the chosen research methodology and research design highlighted the aspects that encumber research in this field. Specific limitations of the study relate to the exclusion of taxation and in-depth zoological principles such as breeding dynamics. Breeding dynamics was discussed in chapter four, but only in its relation to analysis and financial estimation models and recommendations. The primary objective of this study was to develop guidelines for investing in high-value wildlife, and consequently the detailed application and financial modelling of the theories and recommendations was not part of the scope of the study. The research was also aimed at highlighting various investment options available to investors. Detailed benchmarking of high-value wildlife investment performance versus other traditional and alternative investments was not included.

6.6 RECOMMENDATION FOR FURTHER RESEARCH

As this research aims to provide a basis for further research, it cannot be considered a complete analysis and discussion of the high-value wildlife market. The research potential for further study in the fields of financial management, management accounting, accounting, economics and various other academic disciplines are nearly infinite. The following list of recommendations for further research is by no means complete (due to the developing nature of the high-value wildlife market) but can act as a basis for further research:

- Effects of taxation on investments pertaining to high-value wildlife, specifically South African capital gains tax and the possibility of exclusions and exemptions.
- Developing a regulatory recommendation and statutes that should govern investments in high-value wildlife.
- Detailed financial modelling and application of the theories and recommendations suggested in this text in the perspective of ranchers (business owners), individual investors and institutional investors.
- Developing a valuation model for the various wildlife species that is based on unique characteristics and zoological principles as a metric founded in sound financial principles and modelling.
- Detailed risk modelling related to actuarial and banking fields of study for the purposes of creating auction price estimations and models of risk.
- Determining the price bottom and so the intrinsic value of the various species of high-value species.
- Determining the economic relationship/correlation among high-value wildlife asset classes and other traditional investment vehicles in order to determine the appropriate asset portfolio allocation.

6.7 CONCLUSION

This dissertation was aimed at establishing the validity of high-value wildlife as an investment alternative whilst contextualizing the investment landscape and industry it forms part of. The research was aimed at providing an overview of the nature of high-value wildlife investment,

as a new and uniquely South African asset class. The potential of the industry as a whole for South Africa and for investors cannot be underscored, considering the growth potential and high returns it can offer. South Africa is poised to become the world's leading authority in high-value wildlife breeding due to its favourable climate/environment and knowledge base pertaining to ranching. It is noteworthy to mention, as previously stated, that the drastic growth over the last few years cannot be indefinitely sustainable. Prices in the market will stabilize and realign to the intrinsic value of each specie, and result in a decrease in growth and profits. This potential decrease or realignment in the value of the different high-value species, highlights the need for appropriate analysis methods and understanding of the driving forces behind the industry.

LIST OF REFERENCES

ABSA. 2012. The trend towards game ranching in Southern Africa. Johannesburg: ABSA. (Module 1.)

American Heritage Dictionary of the English Language. 2000. Income. http://www.thefreedictionary.com/income Date of access: 5 May 2013.

American Heritage Dictionary of the English Language. 2009a. Characteristics. http://www.thefreedictionary.com/Characteristics Date of access: 30 May 2013.

American Heritage Dictionary of the English Language. 2009b. Flexibility. http://www.thefreedictionary.com/flexibility Date of access: 31 May 2013.

Anon. 2012. Africa plains game species. http://www.huntinglegends.com/hunting-africa/plainsgame-hunting-in-africa/ Date of access: 14 March 2013.

Appleby, D. 2012. Retirement saving tips for 65-year-olds and over. http://www.investopedia.com/articles/retirement/07/tips65plus.asp#axzz2N9M3vSbM Date of access: 10 March 2013.

Ardehali, P., Paradi, J. & Asmild, M. 2005. Assessing financial risk tolerance of portfolio investors using data envelopment analysis. *International journal of information technology & decision making,* 4(3):491-519.

Arnold, R. 2007. Macroeconomics. 7th ed. London: Thomson South-Western.

ASISA. 2014. The facts of collective investment schemes. http://www.asisa.org.za/index.php/en/home/46-consumer-education/collective-investment-schemes Date of access: 21 April 2014.

Babbie, E.R. & Mouton, J. 2001. The practice of social research. Cape Town: Oxford University Press Southern Africa.

Barnard, H. 2013. Telephonic interview.

Baxter, P. & Jack, S. 2008. Qualitative case study methodology: study design and implementation for novice researchers. *Qualitative report*, 13(4):544-559.

Beattie, A. 2010. FYI on ROI: a guide to calculating return on investment. http://www.investopedia.com/articles/basics/10/guide-to-calculating-roi.asp Date of access: 22 April 2014.

Berenson, M.L., Levine, D.M. & Krehbiel, T.C. 2006. Basic business statistics concepts and applications. 10th ed. New York: Pearson Prentice Hall.

Bezuidenhout, R. 2013. Game auction trends for 2012. http://www.farmersweekly.co.za/article.aspx?id=34535&h=Game-auction-trends-in-2012 Date of access: 6 March 2013.

Blaxter, L., Hughes, C. & Tight, M. 2010. How to research. 4th ed. Maidenhead: Open University Press.

Blumberg, B., Cooper, D.R. & Schindler, P.S. 2011. Business research methods. 3rd ed. London: McGraw-Hill.

Bodie, Z., Kane, A. & Marcus, A.J. 2010. Essentials of investments. 8th ed. Boston, Mass.: McGraw-Hill Irwin.

Bolton, P., Chen, H. & Wang, N. 2013. Market timing, investment, and risk management. *Journal of financial economics*, 109(1):40-62.

Botha, M., Rossini, L., Geach, W., Goodall, B., Du Preez, L., Palframan, J. & Rabenowitz, P. 2010. Fundamentals of financial planning. Cape Town: LexisNexis.

Bothma, J. du P. 2005. Extensive wildlife production in South Africa. Pretoria: Centre for Wildlife Management, University of Pretoria.

Bothma, J. du P. & Cloete, P. 2013. Economic review of the South African wildlife ranching industry based on live wildlife auction. (Unpublished.)

Breakwell, G.M. 2006. Research methods in psychology. 3rd ed. London: Sage.

Brown, A. 2013. Active versus passive investing debate goes a step further. http://www.forbes.com/sites/abrambrown/2013/06/13/taking-the-active-versus-passive-investing-debate-a-step-further/ Date of access: 14 June 2013.

Brown, K.C. & Reilly, F.K. 2009. Analysis of investments and management of portfolios. 9th ed. Mason, Oh.: South Western Cengage Learning.

Bryman, A. & Bell, E. 2011. Business research methods. 3rd ed. Oxford: Oxford University Press.

Brynard, P. & Hanekom, S.X. 2006. Introduction to research in management-related fields. 2nd ed. Pretoria: Van Schaik.

Butcher, C. 2007. Investment decisions driven by passion. *Accountancy SA*, 21(1478):38-39.

Campbell, R.H. 2012a. Credit risk. http://financial-dictionary.thefreedictionary.com/Credit+risk Date of access: 24 June 2013.

Campbell, R.H. 2012b. Expected return. http://financial-dictionary.thefreedictionary.com/Expected+return Date of access: 17 June 2013.

Campbell, R.H. 2012c. Inductive reasoning. http://financial-dictionary.thefreedictionary.com/inductive+reasoning Date of access: 14 August 2012.

Campbell, R.H. 2012d. Liquidity. http://financial-dictionary.thefreedictionary.com/liquidity Date of access: 3 June 2013.

Campbell, R.H. 2012e. Portfolio diversification. http://financial-dictionary.thefreedictionary.com/Diversification+(finance) Date of access: 8 June 2013.

Campbell, R.H. 2012f. Return. http://financial-dictionary.thefreedictionary.com/Return Date of access: 5 June 2013.

Campbell, R.H. 2012g. Risk. http://financial-dictionary.thefreedictionary.com/risk Date of access: 5 June 2013.

Campbell, R.H. 2012h. Term. http://financial-dictionary.thefreedictionary.com/term Date of access: 5 June 2013.

Casson, M. & Da Silva, L. 2013. Foreign direct investment in high-risk environments: an historical perspective. *Business history*, 55(3):375-404.

Cavezzali, E. & Rigoni, U. 2012. Know your client! Investor profile and tailor-made asset allocation recommendations. *Journal of financial research*, 35(1):137-158.

Chance, M. 2001. An introduction to derivatives and risk management. 5th ed. Orlando, Fla.: Harcourt College Publishing.

Chardonnet, P., Des Clers, B., Fisher, J., Gerhold, R., Jori, F. & Lamarque, F. 2002. The value of wildlife. *Rev. sci. tech*, 22(1):15

Cheng, P., Lin, Z. & Liu, Y. 2010. Illiquidity and portfolio risk of thinly traded assets. *Journal of portfolio management*, 36(2):126-138.

Cheung, S.N.S. 1987. Economic organization and transaction costs. (The new Palgrave: a dictionary of economics. London: Macmillan. v. 2:55-58.)

Chisholm, A. 2004. Derivatives demystified: a step-by-step guide to forwards, futures, swaps and options. 2nd ed. Chester, UK: Wiley Finance.

Choudhry, M. 2006. Bonds: a concise guide for investors. New York: Palgrave Macmillan.

Christie, S. 2012. Wildlife prices too big for genes. http://mg.co.za/article/2012-04-20-wildlife-prices-too-big-for-genes Date of access: 14 March 2013.

CIMA. 2012. Financial strategy: Paper 3. Oxford: Elsevier & Kaplan.

Cloete, P. 2013. Evaluating investment opportunities in the wildlife sector. *Game and hunt:* 74-76.

Cohen, M.Z., Kahn, D.L. & Steeves, R.H. 2000. Hermeneutic phenomenological research: a practical guide for nurse researchers. Thousand Oaks, Calif.: Sage.

Colins English Dictionary. 2012. Criterion. http://www.thefreedictionary.com/criteria Date of access: 30 May 2013.

Collins English Dictionary. 2003a. Capital growth. http://www.thefreedictionary.com/Capital+growth Date of access: 30 May 2013.

Collins English Dictionary. 2003b. Income. http://www.thefreedictionary.com/income Date of access: 30 May 2013.

Cooper, D.R. & Schindler, P.S. 2011. Business research. 11th ed. New York: McGraw-Hill.

Correia, C., Flynn, D., Uliana, E. & Wormald, M. 2011. Financial management. 7th ed. Cape Town: Juta.

Dahlman, C. 1979. These, then, represent the first approximation to a workable concept of transaction costs: search and information costs, bargaining and decision costs, policing and enforcement costs. *Journal of law and economics,* 21(2):141-162.

Davies, M. 2012. Investing vs. gambling: where is your money safer? http://www.investopedia.com/financial-edge/0512/investing-vs.-gambling-where-is-your-money-safer.aspx Date of access: 5 May 2013.

Deming, E. 1990. Sample design in business research. 6th ed. New York: Wiley.

Dictionary of Financial Terms. 2008a. Market timing. http://financial-dictionary. thefreedictionary.com/Market+timing Date of access: 8 June 2013.

Dictionary of Financial Terms. 2008b. Risk. http://financial-dictionary.thefreedictionary. com/risk Date of access: 5 June. 2013.

Dictionary of Financial Terms. 2008c. Term. http://financial-dictionary.thefreedictionary. com/term Date of access: 5 June. 2013.

Downing, R. 2014. Voldoende opbrengs op kapitaal? *Game and hunt:* 68-69.

Doyle, C. 2011. Judgemental sampling: a dictionary of marketing. 3rd ed. Oxford: Oxford University Press.

Dry, G.C. 2010. Commercial wildlife ranching's contribution to the green economy: wildlife ranching in perspective. Port Elizabeth. http://www.africaindaba.co.za/Newsletter/ 14htm. Date of access: 4 March 2013.

Dry, G.C. 2012. Wildlife ranching in perspective. http://www.wrsa.co.za/management-a-production/item/167-wildlife-ranching-in-perspective Date of access: 4 March 2013.

Du Plessis, W. 2012. Bank warns of game-price bubble. http://finweek.com/2012/05/08/ bank-warns-of-game-price-bubble/ Date of access: 30 April 2014.

Du Toit, J.G. 2007. Report: Role of the private sector in the wildlife industry. Tshwane: Wildlife ranching SA/ Du Toit Wilddienste.

Durrheim, K. & Painter, D. 2012. Collecting quantitative data: Sampling and measuring. (*In* Terre Blanche, M, Durrheim, K & Painter, D., *eds*. Research in practice: applied methods for the social sciences. Pretoria: Van Schaik. p. 151-159.)

Ebedes, H., Reilly, B., Van Hoven, W. & Penzhorn, B. 2002. The economic realities of the game industry in South Africa. Pretoria: South African Game Ranchers Organization.

Eisenhardt, K.M. 1989. Building theories from case study research. *Academy of management review*, 14(4):532-550.

Epps, T. 2000. Pricing derivative securities. Singapore: World Scientific.

Erasmus, P., Theron, E., Van den Berg, J. & Van Rooyen, J. 2003. Introduction to investment management. Stellenbosch: Stellenbosch Publishers & Distribution.

Fabozzi, F. 2005. The handbook of fixed income securities. 7th ed. New York: McGraw-Hill.

Farlex Financial Dictionary. 2010. Research ethics. http://encyclopedia.thefreedictionary.com/Research+ethics Date of access: 14 August 2013.

Farlex Financial Dictionary. 2012a. Business risk. http://financialdictionary.thefreedictionary.com/Business+risk Date of access: 24 June 2013.

Farlex Financial Dictionary. 2012b. Expected return. http://financial-dictionary. thefreedictionary.com/Expected+return Date of access: 17 June 2013.

Farlex Financial Dictionary. 2012c. Inflation. http://financial-dictionary.thefreedictionary. com/Inflation Date of access: 10 June 2013.

Farlex Financial Dictionary. 2012d. Liquidity. http://financial-dictionary.thefreedictionary. com/liquidity Date of access: 31 May 2013.

Farlex Financial Dictionary. 2012e. Portfolio diversification. http://financial-dictionary. thefreedictionary.com/Diversification+(finance) Date of access: 8 June 2013.

Farlex Financial Dictionary. 2012f. Return. http://financial-dictionary.thefreedictionary. com/Return Date of access: 5 June 2013.

Farlex Financial Dictionary. 2012g. Risk. http://financial-dictionary.thefreedictionary. com/risk Date of access: 5 June 2013.

Farlex Financial Dictionary. 2012h. Term. http://encyclopedia.thefreedictionary.com/Term Date of access: 5 June 2013.

Farlex Financial Dictionary. 2012i. Transaction cost. http://encyclopedia.thefreedictionary.com/transaction+cost Date of access: 8 June 2013.

Fidelity. 2012. The pros' guide to diversification. https://www.fidelity.com/viewpoints/guide-to-diversification Date of access: 4 April 2013.

Gad, S. 2007. Capital budgeting. http://www.investopedia.com/university/capital-budgeting/importance.asp Date of access: 11 June 2013.

Gibbert, M., Ruigrok, W. & Wicki, B. 2008. What passes as a rigorous case study? *Strategic management journal,* 29(13):1465-1474.

Gillham, B. 2005. Case study research methods. London: Continuum.

Goodman, L.A. 2011. Comment on respondent-driven sampling and snowball sampling in hard-to-reach populations and snowball sampling not in hard-to-reach populations. *Sociological methodology,* 41(10):347-353.

Grix, J. 2004. Palgrave study skills: the foundation of research. 2nd ed. London: Palgrave Macmillan.

Guinan, J. 2009a. Investopedia's guide to wall speak: asset allocation. http://financial-dictionary.thefreedictionary.com/Asset+allocation Date of access: 7 July 2013.

Guinan, J. 2009b. What does expected return mean? http://financial-dictionary.thefreedictionary.com/Expected+return Date of access: 17 June 2013.

Guzman, O. 2008. Strengths & weaknesses of return on investment. http://smallbusiness.chron.com/strengths-weaknesses-return-investment-3420.html Date of access: 16 March 2014.

Hallman, G.V. & Rosenbloom, J.S. 2009. Private wealth management: the complete reference for the personal financial planner. 8th ed. New York: McGraw-Hill.

Harris, M. & Raviv, A. 1996. The capital budgeting process: incentives and information. *Journal of finance,* 51(4):1139-1174.

Hassett, K. 2008. The concise encyclopedia of economics: Investment. http://www.econlib.org/library/Enc/Investment.html Date of access: 11 February 2013.

Henning, E., Van Rensburg, W. & Smit, B. 2004. Finding your way in qualitative research. 2nd ed. Pretoria: Van Schaik.

Houghton Mifflin. 2003a. Unsystematic risk. http://financial-dictionary.thefreedictionary.com/Undiversifiable+Risk Date of access: 19 June 2013.

Houghton Mifflin. 2003b. Wall street words: an A to Z guide to investment terms for today's investor: timing. http://financial-dictionary.thefreedictionary.com/Market+timing Date of access: 8 June 2013.

Hull, L. 2011. Is active investing better than passive investing? *Podiatry management,* 30(7):67-68.

Humphrey, C. & Lee, B. 2004. The Real Life Guide to Accounting Research. 2nd ed. London: Elsevier.

Investopedia. 2011a. Collectables defined. http://www.investopedia.com/terms/c/collectible.asp Date of access: 21 April. 2014.

Investopedia. 2011b. Definition of 'reinvestment risk'. http://www.investopedia.com/terms/r/reinvestmentrisk.asp Date of access: 24 June 2013.

Investopedia. 2011c. Internal rate of return: IRR. http://www.investopedia.com/terms/i/irr.asp Date of access: 24 April 2013.

Investopedia. 2012a. Definition of 'expected return'. http://www.investopedia.com/terms/e/expectedreturn.asp Date of access: 17 June 2013.

Investopedia. 2012b. The difference between active and passive investing. http://www.investopedia.com/university/introduction-stock-trader-types/active-and-passive-traders.asp. Date of access: 14 June 2013.

Investopedia. 2012c. Financial assets. http://www.investopedia.com/terms/f/financialasset.asp Date of access: 5 May 2013.

Investopidia. 2012d. Definition of 'liquidity'. http://www.investopedia.com/terms/l/liquidity.asp Date of access: 3 June 2013.

Investopedia. 2013a. Collective investment fund. http://www.investopedia.com/terms/c/collective-investment-fund.asp Date of access: 21 April 2014.

Investopedia. 2013b. Definition of "inflation". http://www.investopedia.com/terms/i/inflation.asp Date of access: 10 June 2013.

Investopedia. 2013c. Definition of 'diversification'. http://www.investopedia.com/terms/d/diversification.asp Date of access: 8 June 2013.

Investopedia. 2013d. Definition of 'hurdle rate'. http://www.investopedia.com/terms/h/hurdlerate.asp Date of access: 19 June 2013.

Investopedia. 2013e. Definition of 'risk-return tradeoff'. http://www.investopedia.com/terms/r/riskreturntradeoff.asp Date of access: 10 June 2013.

Investopedia. 2013f. Definition of 'unsystematic risk'. http://www.investopedia.com/terms/u/unsystematicrisk.asp Date of access: 19 June 2013.

Investopedia. 2013g. Financial concepts: asset allocation. http://www.investopedia.com/university/concepts/concepts4.asp Date of access: 7 July 2013.

Investopedia. 2013h. Non-financial assets. http://www.investopedia.com/terms/n/nonfinancialasset.asp Date of access: 5 May 2013.

Investopedia. 2013i. Return on investment (ROI). http://www.investopedia.com/terms/r/returnoninvestment.asp Date of access: 16 March 2014.

Investopedia. 2013j. Return, risk and the security market line: systematic and unsystematic risk. http://www.investopedia.com/walkthrough/corporate-finance/4/return-risk/systematic-risk.aspx Date of access: 19 June 2013.

Investopedia. 2013k. What is the difference between preferred stock and common stock? http://www.investopedia.com/ask/answers/182.asp Date of access: 7 July 2013.

Investopedia. 2013l. Characteristics, uses and taxation of investments: tangible assets. http://www. investopedia.com/exam-guide/cfp/characteristics/cfp33.asp Date of access: 6 June 2013.

Investopedia. 2013m. Investing. http://www.investopedia.com/terms/i/investing.asp#axzz2KZeT69p4 Date of access: 11 February 2013.

Kennon, J. 2008. Saving money vs. investing money: finding the right balance between saving and investing. http://beginnersinvest.about.com/od/savingsanddebtmanagement/a/saving-vs-investing.htm Date of access: 17 March 2013.

Kennon, J. 2013. How to become wealthy: nine truths that can set you on the path to financial freedom. http://beginnersinvest.about.com/cs/personalfinance1/a/blwealthy.htm Date of access: 21 February 2013.

Krajice, D. 2013. The ROI of everything. *Marketing insights,* 35(2):8-9.

Kruger, J. & Lubbe, G. 2011. Investment introduction. (Unpublished.)

Lamb, K. 2010a. Capital market history: risk and returns. http://www.investopedia.com/articles/08/risk.asp Date of access: 19 June 2013.

Lamb, K. 2010b. Evaluation of customers: types of investment risks. http://www.investopedia.com/exam-guide/finra-series-6/evaluation-customers/types-investment-risks.asp Date of access: 24 June 2013.

Leedy, P.D. & Ormond, J.E. 2013. Practical research: planning and design. 10th ed. Upper Saddle River, N.J: Pearson Education.

LifeScience. 2012. Deductive reasoning vs inductive reasoning. http://www.livescience.com/21569-deduction-vs-induction.html Date of access: 14 August 2013.

Lightbulb Press. 2008. Asset allocation. http://financial-dictionary.thefreedictionary.com/Asset+allocation Date of access: 7 July 2013.

Livingston, M. 2003. Bonds and bonds derivatives. Oxford: Blackwell Publishing.

Longman Business English Dictionary. 2001. Research ethics. 4th ed. Essex: Pearson Education.

Loth, R. 2010. Do money-market funds pay? http://www.investopedia.com/articles/02/120602.asp Date of access: 7 July 2013.

Macfarlane, B. 2009. Researching with integrity: the ethics of academic enquiry. New York: Routledge.

Maginn, J., Tuttle, D., Pinto, E. & McLeavey, D. 2007. Management investment portfolios: a dynamic process. 3rd ed. Hoboken, N.J.: Wiley.

Malan, D. 2008. A manager's carousel: passive vs active investing in South Africa: investment. *Blue chip,* 21(33):48-48.

Mayo, H.B. 2008. Investments: an introduction. 9th ed. Mason, Oh.: Thomson South-Western.

McGraw, H. 2013. Finance: internal rate of return and modified internal rate of return. http://connect.mcgraw-hill.com/sites/0077443438/student_view0/ebook/chapter13/chbody1/

internal_rate_of_return_and_modified_internal_rate_of_return.htm Date of access: 24 April 2014.

McRae, T. 1997. Managing your own finances. London: International Thomson.

Mellenbergh, G.J., Adèr, H.J., Baird, D. & Cornell, J.E. 2003. Conceptual issues of research methodology for the behavioural, life and social sciences. *Journal of the Royal Statistical Society: Series D (The Statistician),* 52(2):211-218.

Merriam, S.B. 2009. Qualitative research: a guide to design and implementation. 3rd ed. San Francisco, Calif.: Jossey-Bass.

Middelberg, S.L. 2011. The accountancy implications of commodity derivatives in the agricultural sector. Potchefstroom: North-West University. (Thesis - PhD.)

Moneyweb. 2012. Swamped by debt: South Africans battle to stay afloat. http://www.moneyweb.co.za/moneyweb-economic-trends/swamped-by-debt-south-africans-battle-to-stay-aflo?sn=2009+Detail Date of access: 4 April 2013.

Mott, G. 1997. Investment appraisal. 3rd ed. London: M&E Pitman Publishing.

Mouton, J. 2012. How to succeed in your master's and doctoral studies: a South African guide and resource book. 16th ed. Pretoria: Van Schaik Publishers.

NAMC. 2006. Report on the investigation to identify problems for sustainable growth and development in South Africa. Pretoria,South Africa: The National Agricultural Marketing Council. (nr. 2006)

Neuman, W.L. 2012. Basics of social research: qualitative and quantitative approaches. 3rd ed. Boston, Mass.: Pearson.

Oakford, R. 2007. Capital budgeting: a quantitative evaluation of investment alternatives. New York: Ronald Press.

Oliver, P. 2010. The student's guide to research ethics. 2nd ed. Maidenhead: Open University Press.

Olivier, P. 2013. Colour variations of African antelope: to be or not to be? http://www.pacificbreeze353.com/newsletters/index.cfm?y=article&company=17&article=5831&nl=845&click=web&subsection=56&langu=1 Date of access: 8 April 2013.

Onwuegbuzie, A.J. & Leech, N.L. 2005. On becoming a pragmatic researcher: the importance of combining quantitative and qualitative research methodologies. *International journal of social research methodology: theory & practice*, 8(5):375-387.

Otley, D. & Berry, A. 1998. Case study research in management accounting and control. *Accounting education*, 7:S105-S127.

Oxford, D. 2010. Saving. http://oxforddictionaries.com/definition/english/saving Date of access: 11 February 2013.

Oxford, D. 2013. Criteria. http://www.thefreedictionary.com/criteria Date of access: 30 May 2013.

PSG. 2013. The case for investing in unit trusts. http://www.equinox.co.za/learn/nutshell/ Date of access: 21 April 2014.

Ramadass, P. & Wilson, A.A. 2009. Research and writing across the disciplines. 4th ed. Chennai: MJP Publications.

Random House Kernerman Webster's College Dictionary. 2010. Characteristics. http://www.thefreedictionary.com/Characteristics Date of access: 30 May 2013.

Ryan, F., Coughlan, M., Cronin, P. 2007. Step-by-Step guide to critiquing research. *British Journal of Nursing*, 16(12):738-744.

Renneboog, L. & Spaenjers, C. 2013. Buying Beauty: On Prices and Return in the Art Market. *Management Science*, 59(1):36-53.

Shahid Ebrahim, M. & Hussain, S. 2009. Financial development and asset valuation: the special case of real estate. *Journal of banking and finance,* 34(1):150-162.

Smith, M. 2011. Research methods in accounting. 2nd ed. London: Sage.

South African Reserve Bank. 2009. The inflation target. http://www.resbank.co.za/ MonetaryPolicy/DecisionMaking/Pages/InflationMeasures.aspx Date of access: 10 June 2013.

Steinert-Threlkeld, T. 2012. Active vs. passive: it's a continuum now. *Money management executive,* 20(43):1-6.

Steyn, L. 2012. Big bucks for game ranchers. http://mg.co.za/article/2012-01-06-big-bucks-for-game-ranchers Date of access: 4 April 2013.

Sullivan, A. & Sheffrin, S. 2003. Economics: principle in action. 2nd ed. New York: Pearson Prentice Hall.

Swart, N. 2012. Personal financial management: the Southern African guide to personal financial planning. 3rd ed. Claremont: Juta.

Terre Blanche, M. & Durrheim, K. 2006. Research in practice: applied methods for the social sciences. Cape Town: UCT Press.

Tresidder, T. 2013. 12 tips to build wealth for early retirement. http://financialmentor.com/ free-articles/retirement-planning/early-retirement-planning/12-tips-to-build-wealth-for-early-retirement Date of access: 10 March 2013.

Tseng, H., Duan, C. & Tung, H. 2010. Modern business ethics research: concepts, theories, and relationships. *Journal of business ethics,* 91(4):587-597.

UTIMCO (University of Texas Investment Management Co.) 2006. Frequently used terms. http://www.utimco.org/funds/allfunds/2006annual/ faq_terms.asp Date of access: 4 April 2013.

Van Bergen, J. 2010. Getting to know the money market. http://www.investopedia.com/articles/04/071304.asp Date of access: 7 July 2013.

White, B. 2004. Writing your MBA dissertation. 4th ed. London: Thomson Learning.

Whitfield, B. 2011. The 2012 money game. *Finweek.* http://finweek.com/2011/12/13/the-2012-money-game/ Date of access: 30 November 2013.

Winstanley, C. 2009. Writing a dissertation for dummies. 3rd ed. Chichester: Wiley.

Yin, R.K. 2003. Case study research: design and methods. 3rd ed. Thousand Oaks, Calif.: Sage.

Yin, R.K. 2012. Applications of case study research. 3rd ed. Thousand Oaks, Calif.: Sage.

Zucchi, K. 2013. Financial markets: capital vs. money markets. http://www.investopedia.com/articles/investing/052313/financial-markets-capital-vs-money-markets.asp**.** Date of access: 8 July 2013.

ADDENDUM A

Interview Guidelines for Analysing High-value Wildlife as an Investment alternative

This interview is part of a study into the analysis of high-value wildlife as an investment alternative. This study is based on case study methodology specifically relating to investment firms in high-value wildlife. The case study methodology is supplemented by expert interviews and a literature review (pertaining to investment in high-value wildlife and investment science) to increase the scientific validity. Ultimately this will enable this research to lay forth best practice principles for investors in high-value wildlife. Whilst this study aims to analyse how the investment company perceive and analyse investment in higher value wildlife, the main focus of this study is to determine guidelines for the holistic best practice methods for future investors.

The methodology followed in the dissertation is based on semi-structured interviews in relation to both cases studies. This guide detailed below enabled the researcher to receive information in a structured form whilst still allowing the interviewee and the researcher to deviate if necessary.

The following are categories of question relating to various aspects of high-value wildlife investment and the analysis there of based on the literature review:

1. **Background** (This is in relation to the company chosen for the case study and/or to prove the validity of an expert)
2. **High-value wildlife investment and the analysis methods** (methods and techniques utilized General effect on investment, handling of inflation and market expectations))
3. **Cash flows** (The handling of factors pertaining to cash flow projection)
4. **Costs** (Cost structure analysis and the effects and inclusion relating to the analysis)
5. **Risk management** (effect thereof, mitigation techniques, use of discounting rates)
6. **Recommendation** (advice from experts to investors)

1. Background

1.1 How long has the company been in business?

- 1.1.1 What is the company's business type/shareholders amount?
- 1.1.2 What business model does the company employ?
- 1.1.3 Can you elaborate on the mission, vision and goals of the company?
- 1.1.4 Why use this model, what makes this business model unique?
- 1.1.5 What wildlife does the company hold?
- 1.1.6 What does the company see as high-value wildlife, breach amount?

1.2 Why invest in higher-value wildlife?

- 1.2.1 What species of high-value wildlife does the company and its shareholders invest in?
- 1.2.2 Why these specific species and on what grounds does the company base the decisions on?
- 1.2.3 What species are the most profitable?
- 1.2.4 Which species have a high mortality rate, is there a link between high auction price and mortality rate?

1.3 Can you give me a rough estimate about the asset value of the wildlife on the ranch?

- 1.3.1 What is the estimate value of the ranch?
- 1.3.2 What were the major adjustments in property, equipment and labour was needed to implement your business model and so to ranch with high-value wildlife?
- 1.3.3 What is the load bearing capacity of the ranch in terms of wildlife, to what extent is the ranches' capacity met?

2. High-value wildlife investment and the analysis methodology

2.1 How does the company measure performance and profitability?

- 2.1.1 What are the management's financial objectives?
- 2.1.2 How does the company measure these objectives?
- 2.1.3 How does the company measure profitability?

2.1.4 What is the profitability per animal, herd and the ranch as a whole? For:

- The company
- For investors
- For directors or employees

2.2 Does the company see the wildlife as an investment or as inventory?

2.2.1 What is the company's opinion relating to the nature of this investment? Is this investment speculative in nature or a long term investment for your clients?

2.2.2 Is the investment an active or passive investment for you clients?

2.2.3 How do investment in high-value wildlife compare to other investment options?

2.2.4 What are the advantages and disadvantages relating to investment in high-value wildlife?

2.3 As stated earlier, this study aims to construct a holistic analysis methodology for investors and related parties. Please provide answer in the perspective of independent investor and in the perspective of you cliental. Considering it is an investment for your clients, what is the company's opinion relating to the following investment factors relating to high-value wildlife investment?

2.3.1 Income generated from the investment?

2.3.2 The growth of the investment?

2.3.3 Flexibility, adaptability granted to investors relating to their investment?

2.3.4 Liquidity of the investment?

2.3.5 Taxability for the company, cliental and independent investors?

2.3.6 What are the knowledge, expertise and management requirements needed by investors to manage their investments? How easy is it for investors to manage their investments?

2.3.7 What is the average amount for investors to invest, maximum and minimum?

2.3.8 What is the term of the investment?

2.3.9 What is the reinvestment rate of the company for investors?

2.3.10 What are the transaction costs associated with the investment, pre and post investment?

2.3.11 How important is timing of purchase for investors?

2.3.12 How does the principle of diversification relate to high-value wildlife? (Sole investment, eggs in one basket)

2.3.13 What control does the investor have over their investment?

2.4 What internal analysis methodology does the company employ relating to the investment analysis does the company factor in the time value of money?

2.4.1 What made the company choose this method of analysis?

2.4.2 In the light of the following investment appraisal methods what would the company suggest their investors/independent rancher utilize?

- Payback period / Adjusted?
- Net present value?
- Internal rate of return?
- Equivalent Annuity method?

2.4.3 Does the company factor in the effect of inflation and taxation into their analysis models?

2.5 What does the company perceive as risk relating to investment in high-value wildlife?

2.5.1 In comparison to other investment options how do the company perceive investment risk?

2.5.2 Does the company make use of discounting rates when analysing investments?

2.5.3 How does the company determine an acceptable discount rate?

2.5.4 What is the company's opinion of the following risks and how it effects the company?

- Business risk - risk that a company will go bankrupt
- Taxability risk - tax advantageous status could potentially lose that status
- Call risk - called prior to maturity
- Inflationary risk
- Price risk
- Exchange rate risk

3. Cash flows

3.1 Does the company rely on cash flow projections for investment appraisal?

3.2 Please explain when and how you factor + and - cash flows.

3.3 How does the mortality rate and the pregnancy rate effect cash flows?

4. Costs

4.1 Can you explain the costs associated with investment in high-value wildlife?

4.2 Does the company calculate a cost per animal?

4.3 Is the cost factored in at the beginning of an investment?

4.4 How does the company factor the time value increase in costs?

5. Economic Climate

5.1 In your opinion, what is the long term prospects of high-value wildlife investment?

5.2 Will auction price continue upwards?

5.3 Assuming prices will decrease where will they settle?

6. Recommendations

6.1 Assuming investors are new and unknown to investment in high-value what would your advice be regarding important factors, considerations and analysis methods be to investors?