Recognising human capital as an asset: the potential influence on decision making

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To whom it may concern

This is to confirm that I, the undersigned, have language edited the completed research of Vera Anne Argyle for the Master of Commerce dissertation entitled: *Recognising human capital as an asset: the potential influence on decision making.*

The responsibility of implementing the recommended language changes rests with the author of the dissertation.

Yours truly,

Andrea Garnett

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"Education is the most powerful weapon which you can use to change the world."

Nelson Mandela

Soli Deo Gloria

TABLE OF CONTENTS

ABSTRACT i
OPSOMMING ii
KEYWORDS iv
LIST OF TABLES v
LIST OF ABBREVIATIONS AND ACRONYMS vi

CHAPTER ONE 1
INTRODUCTION 1

1.1 BACKGROUND 1
1.2 PROBLEM STATEMENT 3
1.3 OBJECTIVES 5
1.3.1 Main objective 5
1.3.2 Secondary objectives 5
1.4 RESEARCH METHODOLOGY 6
1.4.1 Literature review 6
1.4.2 Empirical research 6
1.5 CHAPTER OUTLINE 8

CHAPTER TWO 10
RECOGNISING HUMAN CAPITAL AS AN ASSET 10

2.1 INTRODUCTION 10
2.2 ADVANTAGES OF COMPREHENSIVE HUMAN CAPITAL DISCLOSURE 10
2.3 EXPENSES VS ASSETS 13
2.3.1 Expenses 13
2.3.2 Assets 14
2.3.3 Summary 18
2.4 LINKING HUMAN CAPITAL TO THE CORE DEFINITION OF AN ASSET 18
2.5 HUMAN CAPITAL AS AN INTANGIBLE ASSET 20
2.5.1 Identifiable 21
2.5.2 Non-monetary 21

2.5.3 Summary 21
2.6 RECOGNITION OF INTANGIBLE ASSETS 21
2.6.1 Recognition of intangible assets 22
2.6.2 Measurement of intangible assets 23
2.6.3 Useful life of intangible assets 25
2.6.4 IAS 38 (112-117) Retirement and disposal of intangible assets 27
2.6.5 Summary 28
2.7 MEASUREMENT OF HUMAN CAPITAL 28
2.7.1 Cost associated with human capital 28
2.7.2 Initial measurement of human capital 29
2.7.3 Measurement after initial recognition 30
2.7.4 Useful life 31
2.7.5 Summary 32
2.8 CONCLUSION 33

CHAPTER THREE 34
DETERMINING CURRENT HUMAN CAPITAL DISCLOSURES 34

3.1 INTRODUCTION 34
3.2 RESEARCH METHODOLOGY 34
3.2.1 Population and sample 35
3.2.2 Company profiles 36
3.2.3 Methodology 39
3.3 EMPLOYEE-RELATED COSTS 40
3.3.1 HR Scorecard 40
3.3.2 Human capital 41
3.3.3 Human capital checklist 42
3.4 IDENTIFYING CURRENT HUMAN CAPITAL DISCLOSURES 44
3.4.1 Company human capital disclosures 44
3.4.2 Summary 47
3.5 MEASURING AND REPORTING HUMAN CAPITAL AS AN ASSET 47
3.5.1 Company growth rate, discount rate and borrowing rate 47
3.5.2 Human capital calculation 50

3.5.3 Summary 53
3.6 CONCLUSION 53

CHAPTER FOUR 55
THE IMPACT ON DECISION MAKING 55

4.1 INTRODUCTION 55
4.2 FINANCIAL RATIO ANALYSIS 55
4.2.1 Financial ratio analysis as decision making tool 56
4.2.2 Users of financial statements 56
4.2.3 Limitations of a ratio analysis 58
4.3 CATEGORIES OF FINANCIAL RATIOS 59
4.3.1 Asset management ratios 60
4.3.2 Debt management ratios 60
4.3.3 Profitability ratios 62
4.3.4 Human capital asset ratio 63
4.3.5 Summary 64
4.4 FINANCIAL RATIO ANALYSIS 64
4.5 THE IMPACT ON DECISION MAKING 95
4.5.1 Asset management ratios 95
4.5.2 Debt management ratios 96
4.5.3 Profitability ratios 99
4.5.4 Summary 102
4.6 CONCLUSION 102

CHAPTER FIVE 104
CONCLUSIONS, LIMITATIONS AND RECOMMENDATIONS 104

5.1 INTODUCTION 104
5.2 KEY FINDINGS 104
5.2.1 Current human capital disclosures 104
5.2.2 Significant human capital recognised 105
5.2.3 The impact on decision making 106
5.2.4 Summary 106

5.3 CHAPTER SUMMARY 106
5.4 RECOMMENDATION ON HUMAN CAPITAL DISCLOSURE 107
5.5 SCOPE AND LIMITATIONS OF THE STUDY 108
5.6 RECOMENDATIONS FOR FUTURE RESEARCH 108
5.7 CONCLUSION 109

BIBLIOGRAPHY 111

APPENDIX 1: CALCULATION OF HUMAN CAPITAL AS AN ASSET AND LIABILITY A

APPENDIX 2: CALCULATION OF ADJUSTED FINANCIAL FIGURES C

APPENDIX 3: RECOGNISING CURRENT HUMAN CAPITAL DISCLOSURES D

ABSTRACT

Human capital is a major resource controlled by a company, but is not recognised as an asset by traditional accounting practices. An alternative accounting treatment of human capital, using the human resources scorecard as a guide, is suggested in this study. The study comprises a literature review as well as an empirical study to that end.

The empirical research of this study focuses on how human capital affects important financial figures and ratios of a company when employee-related costs are recognised as an asset rather than as an expense. A corresponding liability was recognised to make provision for an annual cash outflow relating to employee related costs. The annual financial statements of ten companies listed on the JSE were examined in order to determine the impact on the reported results, had human capital been treated as an asset. A methodology whereby asset values for human capital can be calculated was introduced. The influence on several core financial ratios of a company is analysed.

A large increase in assets and liabilities was noted in both 2010 and 2011 when human capital was recognised as an asset rather than as an expense on a company's financial statements. Assets for the companies analysed increased on average between 58.62% and 414.78% and liabilities increased between 204.84% and 748.26%. Due to the large increase in assets and liabilities, the recognition of human capital as an asset had a significant impact on the financial ratios of the companies analysed. This is directly linked to the decision making of company stakeholders.

Throughout this study, it becomes evident that there are some general inadvertencies and inconsistencies regarding the human capital and employee costs recognition and reporting on companies' financial statements. The way in which human capital is reported varies from company to company. The capitalisation of human capital has an impact on the financial performance of a company that cannot be ignored. There are several advantages to comprehensive human capital reporting which includes workforce motivation as well as an enhanced reputation of a company. Whether human capital is treated as an asset or as an expense, companies should invest in broad, comprehensive human capital reporting in their financial statements. The study concludes with recommended human capital disclosure in financial statements.

OPSOMMING

Menslike kapitaal is een van die hoof hulpbronne wat deur ‘n maatskappy beheer word, maar word nie as 'n bate deur die tradisionele rekeningkundige praktyk erken nie. 'n Alternatiewe rekeningkundige erkenning van menslike kapitaal, deur die gebruik van die *human capital scorecard* as 'n gids, word voorgestel in hierdie studie. Die studie bestaan uit 'n literatuurstudie sowel as ‘n empiriese studie.

Die empiriese navorsing van hierdie studie fokus op hoe menslike kapitaal belangrike finansiële syfers en verhoudings van 'n maatskappy beinvloed wanneer werknemer-verwante koste erken word as 'n bate eerder as 'n uitgawe. ‘n Ooreenstemmende las is in die finansiële state van elke maatskappy geskep om voosiening te maak vir die toekomstige uitvloei van salaris en ander werknemer kostes. Die finansiële state van 10 JSE genoteerde maatskappye is ondersoek om die impak op die gerapporteerde resultate te bepaal, indien menslike kapitaal as bate erken word. 'n Formule om batewaardes vir menslike kapitaal te bererken word voorgestel in die studie. Die invloed op verskeie kern finansiële verhoudings van die maatskappye is ontleed.

'n Groot toename in bates en laste is opgemerk in beide 2010 en 2011 wanneer menslike kapitaal erken word as 'n bate eerder as 'n uitgawe op 'n maatskappy se finansiële state. Bates vir die maatskappye wat geanaliseer is, het gemiddeld tussen 58,62% en 414,78% toegeneem en laste het tussen 204,84% en 8,26% toegeneem.

As gevolg van die groot toename in bates en laste, het die erkenning van menslike kapitaal as 'n bate 'n beduidende impak op die finansiële verhoudings van die maatskappye wat ontleed is. Hierdie finansiële verhoudings is direk gekoppel aan die besluitnemingsproses deur die maatskappy se belanghebbendes.

Regdeur die studie is dit duidelik dat daar 'n paar algemene teenstrydighede is ten opsigte van menslike kapitaal en werknemerkoste erkenning en verslagdoening in maatskappye se finansiële state. Die wyse waarop die menslike kapitaal gerapporteer word verskil van maatskappy tot maatskappy.

Die kapitalisasie van menslike kapitaal het 'n beduidende impak op die finansiële prestasie van 'n maatskappy en kan nie geïgnoreer word nie. Daar is verskeie voordele aan omvattende menslike kapitaal verslagdoening, wat arbeidsmag motivering sowel as 'n verbeterde reputasie van 'n maatskappy insluit. Hestsy menslike kapitaal beskou word as 'n bate of as 'n uitgawe, moet maatskappye belê in breë, omvattende menslike kapitaal verslagdoening in hul finansiële state. Hierdie studie sluit af met aanbeveling oor menslike kapitaal verslagdoening in die finansiële state van ‘n maatskappy.

KEYWORDS

Analysis

Assets

Decision-making

Employee-related costs

Expense

Financial ratio

Human capital

Measurement

Recognition

Workforce

LIST OF TABLES

Table 1	Costs associated with employees	40
Table 2	Human capital checklist	43
Table 3	Average inflation South Africa 2007-2012	48
Table 4	Historic prime interest rates South Africa 2009-2012	49
Table 5	Human capital calculation 2010	51
Table 6	Human capital calculation 2011	52
Table 7	AECI ratio analysis	65
Table 8	ARM ratio analysis	68
Table 9	Implats ratio analysis	71
Table 10	Exxaro ratio analysis	74
Table 11	Allied Electronics ratio analysis	77
Table 12	Hudaco ratio analysis	80
Table 13	Distell ratio analysis	83
Table 14	Adcock Ingram ratio analysis	86
Table 15	Pick n Pay ratio analysis	89
Table 16	EOH ratio analysis	92

LIST OF ABBREVIATIONS AND ACRONYMS

AECI	African Explosives and Chemicals Industries
Altron	Allied Electronics
ARM	African Rainbow Minerals
CEO	Chief Executive Officer
CFO	Chief Financial Officer
EBIT	Earnings before interest and tax
HC	Human capital
HR	Human resources
IAS	International Accounting Standards
IFRS	International financial reporting standards
IIRC	International Integrated Reporting Council
Implats	Impala Platinum
JSE	Johannesburg Stock Exchange
ZAR	Zuid-Arikaanse Rand (South African Rand)

CHAPTER ONE

INTRODUCTION

1.1 BACKGROUND

Employee costs have been treated as an expense on the profit and loss report since the days of the industrial revolution. According to Verax (2008:3), the capital shown on the balance sheet of a company only represent its monetary value, buildings, plants and machinery and there is no provision made on financial statements for presenting employees as an asset.

Gamerschlag and Moeller (2011:145) state that very few companies provide their stakeholders with detailed information about human capital, as these companies do not sufficiently assess the value of such reporting. However, according to Brocaglia (2006:1), to stay on top in the global economy, companies have to place more emphasis on their people. Undoubtedly, there is a large gap in the current reporting system in terms of the recognition of human capital on the financial statements.

Defining human capital, intellectual capital and human resource accounting

To better understand the focus of this research, three important concepts are defined, namely, human capital, intellectual capital and human resource accounting.

The IIRC (2011) defines human capital as "people's skills, experience and motivations to innovate." This definition further includes the alignment with, and support of, the organisation's governance framework and ethical values, ability to understand and implement an organisation's strategies, loyalties and motivations for improving processes and ability to lead and collaborate. Keeley (2007:29) defines human capital as "the knowledge, skills, competencies and attributes embodied in individuals that facilitate the creation of personal, social and economic well-being".

Taking into account the core of these definitions, human capital refers to three important factors: the knowledge, skills (competencies) and motivation (attributes that create well-being) of employees.

The concept of human capital is, however, part of a larger concept: intellectual capital. Stewart (1997:10) refers to intellectual capital as intellectual material (knowledge, information, intellectual property and experience) which can be used to create wealth.

Edvinsson (2002:8) describes intellectual capital as a combination of human capital and structural capital. He states that intellectual capital is "the ability to transform knowledge and intangible assets into wealth-creating resources by multiplying human capital with structural capital." In terms of these definitions, intellectual capital represents one key principal, namely, the creation of wealth.

The wealth created by employees needs to be accounted for. This is done by human resource accounting. Flamholtz (1974:44) defines human resource accounting as the process of identifying, measuring, and communicating information about human resources to decision-makers.

Disclosure of human capital

Extensive research has been conducted in the field of human capital recognition. According to Petty and Guthrie (2000:241-251), external disclosure of human capital has been on the agenda of academics and practitioners since late 1980. Furthermore, Abeysekera and Guthrie (2005:151-163) conclude that firms have started to realise the importance of disclosing their internally generated, intangible assets, but little has been done in terms of disclosure.

According to Verax (2008:3-12), it is the *value* of employees that should be recognised, rather than their cost. Sabadie and Johansen (2010:253) further emphasise that human capital is an essential component of national economic competitiveness and that it becomes ever more important as the country develops. In a developing country such as South Africa, the effect and impact of human capital cannot be ignored. Guenther and Beyer (2003:71) further argue that human capital is often mentioned as a company's most important resource.

As can be derived from the abovementioned statements, accountants, practitioners and academia recognise the importance of human capital reporting. However, they have failed to be able to reach a consensus on the topic of recognising and disclosing human capital and this

will continue to stimulate great debate amongst accountants and other interested parties across the globe.

Focus of study

This study specifically focuses on how human capital affects important financial figures and ratios of a company, and ultimately the decision making of stakeholders, when employee-related cost is recognised as an asset rather than as an expense. The financial figures and ratios of a company is further influenced by the recognition of a corresponding liability, to make provision for an annual cash outflow relating to employee related costs. The influence on several core financial ratios of a company is analysed.

To better identify all costs related to employees, two specific concepts are used. Firstly, the definition of human capital is used as described by the IIRC (2011) and Keeley (2007:29).

Secondly, the human resources scorecard is used to assist in this process. According to Boninelli and Meyer (2004:76), the HR scorecard model was developed as an extension to the balanced scorecard. The balanced scorecard was implemented to focus on the non-financial elements of the value chain such as customer business process, learning and growth elements.

The HR scorecard focuses on four major aspects: the acquiring, maintaining and development of employees. It also includes the retention of employees (Boninelli & Meyer, 2004:81).

1.2 PROBLEM STATEMENT

Financial reporting is the core of any company's performance measurement. However, other aspects such as natural capital, manufactured capital and intellectual capital (including human capital) can no longer be ignored.

Kaplan and Norton (2004:52-63) suggest that comprehensive reporting enables the recipients of information to gain a better understanding of human capital properties and potential. They further comment that comprehensive reporting plays a major role in determining a company's market position.

A company in itself, although a separate legal entity, does not have all the essential attributes to operate in a society. It cannot comply with its objectives without human attributes. Less (2011) states that employees, or a company's workforce, can be seen as one of the most important assets of any company.

Although the statement above may well be true, the current reporting guidelines do not allow for the value of human capital to be recognised on a company's financial statements. Lev (2001:8) comments that external reporting focuses almost entirely on financial data, and intangible values such as human capital are not sufficiently reported.

Lev (2004:109-116) additionally states that the future financial success of a company is primarily based on intangible values. He mentions that in an information-based society, intangible values, such as human capital, are key drivers of sustainable competitiveness.

According to the King Code of Corporate Governance for South Africa (2009:12) "...buying a share on any stock exchange, the purchaser makes an assessment of the economic value of a company. The assessment considers the value of matters not accounted for, such as future earnings, brand, goodwill, the quality of its board and management, reputation, strategy and other sustainability aspects." Potential investors thus assess the holistic *value* of a company and are particularly interested in non-financial aspects of a company. Reporting on human capital aspects has become a necessity to investors in making sound economic decisions.

Although human capital is not yet valued or recognised by companies, the value of employees will undoubtedly be investigated and valued by a potential purchaser or merger partner. In fact, Pendola (2011) states that in most cases the goodwill of a merger can directly be linked to the workforce. Thus, there is a direct link between the goodwill created and the quality of the workforce, but it is never formally mentioned.

The lack of recognising and reporting on human capital in financial statements may be one of the most serious shortcomings of our current reporting system. Roslender and Fincham (2001:383-399) argue that the limitations of valuing and recognising human capital has restricted companies in disclosing information on their most valuable assets and revenue generators – their workforce.

Financial ratios of a company, and the analysis thereof, are used for essential internal reporting and decision making purposes. This analysis is similarly used by other stakeholders, in particular potential and existing investors. According to Drake (2012:1), users of financial ratios could include managers, lenders and investors.

If, however, human capital would be reported as an asset, rather than as an expense on the financial statements of a company, important financial ratios might look noticeably different. The financial ratios of a company should be further influenced by the corresponding liability recognised to make provision for an annual cash outflow relating to employee related costs. Altered financial ratios ought to influence the decision making of stakeholders.

1.3 OBJECTIVES

1.3.1 Main objective

The main objective of this study is to examine the impact that the recognition of human capital as an asset and a liability will have on the essential financial ratios of a company. The financial ratios are directly linked to the decision making of stakeholders.

1.3.2 Secondary objectives

The secondary objectives of this study are to:

- consider the advantages of comprehensive human capital reporting;
- explore the concept of human capital in terms of the definition and recognition criteria of an intangible asset;
- consider current human capital disclosures of companies listed on the JSE main board;
- make recommendations regarding human capital disclosure on companies' integrated annual reports;
- explore financial ratio analysis as a decision making tool;
- consider the link between the human-capital-to-total-assets ratio and the change in financial ratio analysis.

1.4 RESEARCH METHODOLOGY

The research methodology will comprise qualitative research through a literature review as well as quantitative research with an empirical study.

1.4.1 Literature review

The purpose of the literature review is to:

- consider the advantages of comprehensive human capital reporting;
- gain a thorough understanding of the recognition and measurement of assets on a company's financial statements;
- explore human capital in terms of the core definition of an asset;
- explore the concept of human capital in terms of the definition and recognition criteria of an intangible asset;
- gain an understanding of employee-related costs in terms of the HR scorecard and cornerstones of human capital;
- explore financial ratio analysis as decision making tool.

1.4.2 Empirical research

Research

The empirical research is conducted by examining the 2011 annual integrated reports of the ten companies selected for this study from the main board of the JSE. The human capital checklist created and described in paragraph 3.3 is used to identify all employee-related costs that these companies disclosed in their financial statements. This checklist is created by using both the HR scorecard as well as the human capital definition. Costs that can be recognised as assets are emphasised. These costs are used in the present value calculation, where human capital is calculated as an asset rather than as an expense.

The human capital valuation is transferred from an expense in the *Statement of Comprehensive Income* to an intangible asset on the *Statement of Financial Position*. Adapted figures are displayed. The financial ratios are recalculated and compared to the originally calculated ratios. Financial ratios for both the 2010 and 2011 financial years are calculated.

Lastly, the total employee costs that could be recognised as assets are measured in relation to the total assets of the company. These ratios were calculated from each of the ten companies' original financial statements. The relationship between the change in the financial ratio analysis and the employee-cost-to-total-asset ratio is discussed in Chapter 4.

Population

The population for this study comprises ten companies listed on the main board of the JSE. These ten companies represent six of the ten main categories as presented on the JSE main board. For the purposes of this study, the companies chosen are a sufficient representation of the categories included in the main board of the JSE.

All ten companies chosen for this study conduct their main business in South Africa and their financial statements are presented in ZAR (South African Rand). The companies selected for this study are listed in Chapter 3 and a brief overview of each company is given.

Integrated reporting

Stakeholders are currently seeking forward-looking information, which will allow them to better understand and assess the value of the organisations they invest in (IIRC, 2011). Integrated reports show how the financial and non-financial information of a company affect one another (Eccles & Krzus, 2010:30).

Integrated reporting helps us to understand better the value of organisations and these annual integrated reports are thus more likely to contain comprehensive information on any employee-related costs. Where possible, the integrated report of a company was used instead

of the annual financial statements. The integrated report of a company provides more detail on employee costs and employee numbers.

1.5 CHAPTER OUTLINE

The study is divided into five chapters:

Chapter 1: Introduction

The first chapter establishes the background to the research, provides the problem statement and states the main and secondary objectives of the study. The research methodology is briefly explained and a chapter outline is provided.

Chapter 2: Recognition of human capital as an asset

In this chapter, the focus is mainly on the recognition of human capital as an asset. The advantages of comprehensive human capital reporting are considered. Subsequently, the characteristics of both an expense and an asset are thoroughly explored.

Human capital is then linked to the core parts of an asset's definition as well as the definition of an intangible asset. The recognition criteria and measurement methods of intangible assets are considered. Lastly, a specific method of human capital measurement is established and explained.

Chapter 3: Determining current human capital disclosures

This chapter's focus is to determine how the companies selected for this study disclose human capital on their financial statements. Firstly, the research methodology of the study is described. Included in this, information about each company's profile is outlined.

A checklist is then generated to identify employee-related (human capital) costs that a company should disclose on its financial statements. This checklist is drawn up by using both the HR scorecard and the human capital definition. Certain employee-related costs can

be recognised as assets. These are costs directly linked to the future benefits employees provide to the company and not benefits that have previously been incurred by the company. All costs related to employees on both the 2010 and 2011 financial statements of each company are identified. These identified figures are exhibited in Appendix 3.

The costs for each company that can be recognised as assets are then measured and disclosed as intangible assets on the adjusted financial figures of the company. These figures are provided in Chapter 4. The method for measuring and disclosing the human capital costs identified is described in section 3.5. This calculation includes detail on the growth rate, borrowing rate and discount rate.

Chapter 4: The impact on decision making

The focus of Chapter 4 is on decision making by using financial ratio analysis. Various stakeholders make use of financial ratios for decision making purposes. Firstly, a closer look is taken at these essential financial ratios. The influence of these ratios on decision making is explained. The ratios calculated in this study are grouped as follows:

- asset management ratios;
- debt management ratios;
- profitability ratios.

These ratios are calculated from the original financial statements of the companies selected for this study. The financial ratios are then recalculated by recognising and disclosing human capital as an asset, as calculated and relayed in Chapter 3.

The new financial ratios are then compared with the original and their impact on decision making examined. The 2010 as well as the 2011 financial ratios are calculated.

Chapter 5: Conclusions, limitations and recommendations

This chapter will highlight the key findings of the research, state the limitations and challenges of the study and provide recommendations for future research into the field of human capital recognition and measurement.

Appendixes

Appropriate documentation is added for clarification.

CHAPTER TWO

RECOGNISING HUMAN CAPITAL AS AN ASSET

2.1 INTRODUCTION

According to Gamerschlag and Moeller (2011:145), a company's most important assets are intangible assets, such as human and intellectual capital. This is especially true in our current knowledge-based economy. A key driver of corporate reputation is to provide human capital information to stakeholders.

The main objective of this chapter is to obtain a thorough understanding of assets and the recognition thereof. Firstly, the potential advantages of comprehensively disclosing human capital in financial statements are considered. Then, the characteristics of human capital being both an expense and an asset are thoroughly analysed.

A comparison is drawn between human capital and the core parts of both the definition of an asset as well as the definition of an intangible asset. The recognition criteria and measurement methods of intangible assets are considered and an appropriate method for measuring human capital is suggested.

2.2 ADVANTAGES OF COMPREHENSIVE HUMAN CAPITAL DISCLOSURE

According to Brockington (2004:223), reporting is defined as providing information to others. They can be either a third party or an internal stakeholder. In a world where all stakeholders are seeking forward-looking information (IIRC, 2011), it is becoming essential for a company to provide extensive information. Companies need to report on important matters that have future consequences for an organisation, such as human capital.

Roslender and Fincham (2004:1-18) argue that human capital can add enormous value to an organisation, but this will require applying both measurement and recognition techniques.

There are several reasons for a company to comprehensively measure and recognise human capital on its financial statements, whether the human capital is treated as an asset or not. Some of these reasons are detailed below.

Financial motivation

Rosenthal and Dudley (2007:740-744) state that in the last two decades, financial incentives have been progressively implemented as tools for encouraging behavioural changes amongst the workforce. Hilb (2008:32) explains how compensation links to motivation by clarifying that a CEO's compensation does not motivate the CEO substantially, for he is already in the position. It rather serves to motivate the vice presidents who are competing to become CEO. If the remuneration of a CEO, or any employee, is thus measured and recognised comprehensively, it could serve as motivation to other employees to work harder and thus contribute to effectively reaching company goals.

As early as the 1960s, financial benefits have played a major role in motivating employees to enter a specific industry or line of work. Smyth (1968:109) explains that organisations use compensation programs to attract and maintain employees, but also to motivate them to reach personal and company goals. Yet, very few companies disclose any information on costs to acquire employees, such as signing bonuses, or costs to maintain employees, such as an increase in salary. These costs are pooled into "salaries" or "wages" and a breakdown of the specifications are rarely found on the financial statements. If organisations provide details on compensation, it could once again attract more skilled employees to the company as well as pressure existing employees to perform at a higher level of effectiveness.

Workforce motivation

According to Gamerschlag and Moeller (2011:147), workforce motivation is defined as an individual employee's willingness to achieve a company's goals and objectives. Workforce motivation is thus an extremely important factor for any company to be able to reach its financial and non-financial goals. It is imperative to distinguish workforce motivation from financial incentives. Financial incentives focus largely on personal benefit, whilst workforce motivation focuses on reaching the company's objectives and goals.

The King III Code on Corporate Governance (2009:11) emphasises a stakeholder inclusive model. Employees of a company constitute a major stakeholder group. This model considers the interests and expectations of stakeholders. According to Wolf and Zwick (2008:160), two of the most effective means of increasing productivity are personnel involvement and financial incentives. Personnel involvement includes transparency and clarity on important company issues. Atkinson *et al.* (1997:25-37) explain that with human capital reporting, a company increases its transparency and will consequently improve workforce motivation.

Huselid (1995:635) further states that an improvement in workforce motivation will not only increase job performance, but will also cause a decrease in absenteeism. The positive effects of extensive human capital reporting will thus directly influence a company's performance.

Reputation and attractiveness

A company's reputation to specific external stakeholders is essential for a company to be successful. Gamerschlag and Moeller (2011:153) found that there is a positive relationship between the disclosure of human capital information and the capital market valuation of a company's shares.

Mitchell *et al.* (1997:853) explain that by using the *stakeholder approach*, a company is viewed as an instrument that satisfies the needs of different stakeholder groups. Each of the stakeholders then evaluates the company according to their own needs. This can be the financial position or objectives of the company. King III (2009:12) states that a stakeholder approach is in the best interest of the company. Success is then defined in terms of lasting positive effects for all stakeholders. Roos *et al.* (2004) further explain that human capital reporting provides stakeholders with additional information that helps them to make better decisions with less effort. Human capital reporting thus enhances the level of need satisfaction for external stakeholders.

If stakeholders are able to make financial decisions regarding a company with ease, it will improve the reputation and attractiveness of the company, which will in turn have a direct influence on the company's financial position.

It is clear that there are several advantages to extensive human capital reporting. Whether human capital is treated as an asset or an expense, companies should invest in broad, comprehensive human capital reporting on their financial statements.

2.3 EXPENSES VS ASSETS

In the current financial reporting system, normally employee-related or human capital costs are measured and recognised as an expense. IFRS Conceptual Framework for Financial Reporting (2010) states in paragraph 4.33 that "expenses that arise in the course of the ordinary activities of the entity include, for example, cost of sales, wages and depreciation. IAS 19, Employee benefits (2010), further requires in paragraph 11 that undiscounted amount of short-term employee benefits in exchange for services shall be recognised as an expense (unless it is included in the cost of an asset). However, according to Petty and Guthrie (2000:241-251), academics and practitioners have been debating on the external disclosure of human capital since the late 1980s. Because of the characteristics of human capital, certain academics and practitioners believe that employee costs should be recognised as an asset.

The focus of the study is on how human capital affects the internal reporting analysis when it is recognised as an asset rather than an expense. In an attempt to characterise human capital as an asset, it is important to distinguish firstly between the characteristics of an expense and an asset. The definitions and detail about both these elements are set out below.

2.3.1 Expenses

Definition

The IFRS Conceptual Framework for Financial Reporting (2010) describes expenses in paragraph 4.25(b) as "decreases in economic benefits during the accounting period in the form of outflows or depletions of assets or incurrence of liabilities that result in decreases in equity, other than those relating to distributions to equity participants."

Schroeder *et al*. (2011:150) give a similar definition of expenses. They state that expenses are the "outflows, or other using-up of assets or incurrence of liabilities (or a combination of

both) during a period from delivering or producing goods, rendering services, or carrying out other activities that constitute the entity's ongoing major or central operations."

From the definitions above, four essential characteristics of expenses can be derived:

- Decrease in economic benefits;
- due to the reduction in assets or the inflow of liabilities;
- during the accounting period;
- other than the distribution to equity participants.

Treating human capital expenses as an expense complies with the definition of an expense in terms of the IFRS Conceptual Framework for Financial Reporting (2010). It results in an outflow of economic benefits (mainly cash) and reduces equity. It however does not give recognition to the capital element of human capital by assuming that there is no future benefit to be derived from payments to the workforce. The measurement and recognition criteria of expenses will not be discussed in any further detail.

2.3.2 Assets

For the purposes of this study, and in order to classify human capital as an asset, it is important to elucidate on the details of an asset. In this paragraph, the definition of an asset is explored and the four main categories of assets are explained.

A closer look is also taken at one of the four types of assets; namely, intangible assets. The main characteristics of an intangible asset are explored in more detail.

Definition

The IFRS Conceptual Framework for Financial Reporting (2010) describes an asset in paragraph 4.4(a) as "a resource, controlled by the entity as a result of past events and from which future economic benefits are expected to flow to the entity."

Schroeder *et al*. (2011:150) define an asset as the "probable future economic benefits obtained or controlled by a particular entity as a result of past transactions or events."

Schroeder *et al*. (2011:150) further explain that any asset has three essential characteristics. "(a) It embodies a probable future benefit that involves a capacity, singly or in combination with other assets, to contribute directly or indirectly to future net cash inflows; (b) a particular enterprise can obtain the benefit and control others' access to it; and (c) the transaction or other event giving rise to the enterprise's right to control the benefit has already incurred."

The IFRS Conceptual Framework for Financial Reporting (2010) explains in paragraph 4.11 that physical form is not necessary to confirm the existence of an asset.

The three important characteristics of an asset are summarised below:

- Probable future benefit to the company;
- the control of others' access to the benefit;
- the event or transaction has already incurred.

Classification of assets

Assets may be classified differently. A common method for classifying assets is according to current and non-current. Current assets will be converted into cash during the production cycle of the business whereas non-current assets will take longer than the production cycle to be converted into cash. Assets may be separated into four main sections as follows:

Current assets

Myburgh *et al.* (2011:281) state that current assets may include accounts receivable, cash and cash equivalents, inventory and short-term investments.

Investments and investment property

According to IAS 40 (7), investment property is held by an entity to earn rentals or for capital appreciation (or both). Investment property generates cash flows independently of other

assets held by an entity and thus distinguishes it from owner-occupied property, which is classified as property, plant and equipment under IAS 16.

Tangible non-current assets

According to Myburgh *et al.* (2011:357), tangible non-current assets may consist of the following:

- property, plant and equipment;
- machinery in the production line;
- equipment such as computers and office furniture;
- vehicles;
- any natural resources.

Intangible non-current assets

IAS 38 (8) defines an intangible asset as "an identifiable, non-monetary asset". An intangible asset has three central characteristics:

- identifiable;
- non-monetary;
- asset.

Another way of classifying assets is to separate assets into operating assets and non-operating assets. Operating assets are employed to earn the main source of revenue. They may be current, non-current, tangible or intangible. Non-operating assets would typically be investments that often earn an income, but are separate from the main operations of the organisation.

Intangible assets

In order to classify human capital as an asset, it has to fall into one of the four main categories of assets as set out above. Human capital does not satisfy the definition of a *current asset*, *investments and investment property.* Although humans are tangible, the intellectual property of humans is not tangible. Human capital can therefore not be classified

as a *tangible non-current asset.* It can be regarded as an operating asset and may meet the definition of an *intangible non-current asset* (intangible asset).

As set out in IAS 38 (8), an intangible asset has three main features:

- identifiable;
- non-monetary;
- asset.

For human capital to meet the definition of an intangible asset, it has to meet these characteristics. The subsequent paragraphs will focus on explaining these characteristics whereas paragraph 2.5 links human capital to the definition of an intangible asset.

Identifiable

IAS 38 (12) elucidates on the identifiability of an asset. An asset is identifiable either if:

- it is separable and can therefore be separated or divided from the entity and “sold, transferred, licensed, rented or exchanged individually or together with a related contract, identifiable asset or liability, regardless of whether the entity intends to do so”; or
- it arises from “contractual or other legal rights, regardless of whether those rights are transferable or separable from the entity or from other rights and obligations”.

Non-monetary

IAS 38 (8) further defines a monetary asset as “money held and assets to be received in fixed or determinable amounts of money”. Monetary assets are defined as financial instruments in terms of IFRS 7. An intangible asset is *non-monetary* and is therefore not classified as a financial instrument.

Asset

An intangible asset has to validate the general definition of an asset. Paragraph 2.3.2 sets out the full definition of a general asset and paragraph 2.4 links human capital to the definition of it.

2.3.3 Summary

There remains uncertainty as to whether human capital should be disclosed as an expense or as an asset. Should human capital be treated as an asset, it would be appropriate to view it as an intangible asset. This section focused on distinguishing between the characteristics of an expense and an asset. The definitions of both these financial statement elements were discussed in detail. The different classifications of assets were briefly discussed with a specific focus on intangible assets.

2.4 LINKING HUMAN CAPITAL TO THE CORE DEFINITION OF AN ASSET

From the definition of assets, an asset has three essential characteristics. To explain effectively how human capital can be recognised as an asset, it is necessary to connect the definition of human capital to each of these three characteristics.

Probable future benefit

It is certainly realistic to expect that human capital (employees) will generate economic benefits in the future. According to IAS 38 (17), future economic benefits from an intangible asset may include "revenue from the sale of products or services, cost savings, or other benefits resulting from the use of the asset by the entity." This includes any reduction in future costs. Thus, any revenue generated through the work of employees can be seen as a benefit to the entity.

According to Myburgh *et al.* (2011:19), future economic benefits can contribute either directly or indirectly to the inflow of cash or cash equivalents. Assets can be engaged in different ways in order to acquire economic benefits. Profits or income directly or indirectly generated by its employees will flow directly to the company. All benefits that accompany sales and other means of income belong to the company itself and not to the employee.

IAS 38 (22) further states that an entity should assess the probability of projected future economic benefits of the asset using reasonable and supportable *assumptions*. These assumptions should represent management's best estimates of the set of economic conditions that will exist over the useful life of the asset. As far as human capital is concerned, these

estimates will include, amongst others, expected future inflation rates, economic and industry growth and improved technology.

For a business that is dependent on human inputs, it is fair to assume that employees will generate future economic benefits for the company. Human capital can thus be regarded as a component that generates probable future benefit.

The control of access to the benefit

The IFRS Conceptual Framework for Financial Reporting (2010), states in paragraph 4.12 that the right of ownership is not essential in determining the existence of an asset. An entity will control an asset if it controls the *benefits,* which are expected to flow from the asset. "Although the capacity of an entity to control benefits is usually the result of legal rights, an item may nonetheless satisfy the definition of an asset even when there is no legal control."

It is clear from IFRS Conceptual Framework for Financial Reporting (2010) that the asset in itself does not necessarily need to be controlled, but the entity should be able to have the sole control of the benefits associated with the asset or benefits arising from the use of this specific asset.

It could be argued that no one can own another person through a contract. However, through an employment contract, economic benefits of people can be garnered. The framework is very clear in that the asset should not necessarily need to be controlled, only the benefits which arise from the asset. If the employee produces any income (benefits) for the entity, these benefits are controlled by the entity, as an employee has no right to control or obtain any of these benefits for his own gain. An employee will share in these benefits in the form of a salary or profit participation. This portion of the share in benefit is once again controlled by the entity in the form of a contractual agreement.

It is clear that an entity has sole control over the benefits that arise from the service of employees. Human capital therefore meets the second part of the definition of an asset.

Transaction or event has already incurred

The IFRS Conceptual Framework for Financial Reporting (2010) explains that "the assets of an entity result from past transactions or events." This means that only assets that have already been attained may be recognised as an asset of the entity. Any transaction or event expected to occur does not give rise to an asset. Thus, the intention to purchase, for example, inventory or machinery does not meet the definition of an asset.

Paragraph 4.12 goes on to explain that although entities normally obtain assets by purchasing or producing them, there are other ways of generating assets; provided that the transaction has already occurred. So, although human capital is not purchased in the sense that a person is bought, or internally produced under normal circumstances, future economic benefits in exchange for future employee benefits is purchased. Human capital is therefore not excluded from the definition of an asset.

If a member of staff has already been employed by means of contractual agreement and the company does not merely have the *intention* to employ a new member of staff, the future benefits to be derived from the employee may be recognised as an asset. The employee should commit to the entity through a contractual agreement and not simply have the *intention* to commit.

Human capital, or an employee, that has pledged a commitment to the entity through a contract, consequently meets the third part of the definition of an asset.

It is clear that human capital meets all three parts of the definition of a general asset. However, before it can be recognised in the financial statements as such, it should meet the recognition criteria explained in paragraph 2.6.1 below. Paragraph 2.5 further attempts to categorise human capital specifically as an intangible asset.

2.5 HUMAN CAPITAL AS AN INTANGIBLE ASSET

As explained in paragraph 2.4, human capital satisfies the definition of an asset. To further classify human capital as an *intangible asset*, it has to satisfy two more characteristics. It has to be *identifiable* and *non-monetary*.

2.5.1 Identifiable

For an element to be classified as an intangible asset, it needs to be identifiable and separate from the entity. Employees can be transferred from one department to another or dismissed from the entity without there being a fundamental impact on the routine activities of the entity. Human capital can be separated from the entity as a whole.

IAS 38 (12) further states that the asset should arise from "contractual or other legal rights, regardless of whether those rights are transferable or separable from the entity or from other rights and obligations". If an entity appoints new employees with a contractual agreement it is in the position to obtain and control any future benefits in terms of this agreement.

The employees of a company, or the human capital, can be separated from the entity as a whole. Most companies also employ their workers with some sort of contractual agreement. Human capital therefore meets the first requirement of an intangible asset.

2.5.2 Non-monetary

As stated, IAS 38 (8) defines a monetary asset as "money held and assets to be received in fixed or determinable amounts of money". Human capital is *non-monetary* and therefore satisfies the second part of the intangible asset definition.

2.5.3 Summary

Human capital meets both parts of the definition of an intangible asset and it also satisfied the criteria for the definition of a general asset. It can be concluded that human capital can be recognised as an asset on the financial statements.

2.6 RECOGNITION OF INTANGIBLE ASSETS

All assets have certain recognition criteria they have to fulfil in order to be recognised as such. This section focuses on the recognition of intangible assets. The different methods to measure an intangible asset are discussed with specific focus on the useful life of the asset. Lastly, the disposal of intangible assets is briefly noted.

2.6.1 Recognition of intangible assets

If an element meets the definition of an asset, it has to satisfy the recognition criteria before it can be recognised on the statement of financial position as such.

The IFRS Conceptual Framework for Financial Reporting (2010) states in paragraph 4.44 that an element on the financial statements can only be recognised once: "it is probable that any future economic benefit associated with the item will flow to or from the entity" and "the item has a cost or value that can be measured with reliability".

Thus, if a company acquires an asset but it holds no economic benefits to the company in the current financial period, it should be recognised as an expense rather than an asset in the current period. This is also true if a company cannot reliably measure this asset.

Probable future benefits

IAS 38 (22) states that an entity "shall assess the probability of expected future economic benefits using reasonable and supportable assumptions that represent management's best estimate of the set of economic conditions that will exist over the useful life of the asset." It is certainly fair to assume that employees will generate future economic benefits for the company.

Reliability of measurement

The asset that is recorded in the financial statements should possess a cost or value that can be measured with reliability. The IFRS Conceptual Framework for Financial Reporting (2010) states in paragraph 4.41, that in many cases this cost or value is estimated. "The use of estimates is often regarded as acceptable in accounting standards when preparing financial statements and as long as the principle is applied consistently and does not undermine their reliability."

If human capital is presented as an asset, an estimated cost or value should be ascribed to it. Even though workforce employment has no initial cost associated with it, (there are certain exceptions) and there is usually no up-front payment for future services, it would indeed be

possible to arrive at an *estimate* value for the future economic benefits of an employee. The measurement of human capital is discussed in more detail in paragraph 2.7.

From the above it is evident that human capital satisfies both criteria for recognition as an asset in the financial statements.

2.6.2 Measurement of intangible assets

Different types of assets require different measurement techniques. IAS 38 sets out the measurement guidelines for intangible assets. This paragraph focuses on initial measurement as well as measurement after initial recognition. In this paragraph, the differences in amortisation of intangible assets with finite useful lives and intangible assets with indefinite useful lives are also explained and the disposal of intangible assets detailed.

Initial measurement

According to IAS 38 (24), an intangible asset shall be measured initially at cost. The initial *cost* of an intangible asset differs from separate acquisition, business combination and internally generated intangible assets.

Human capital, for accounting purposes, is not people, but the economic benefits contained within people. People can be employed, already possessing certain future benefits. This will be similar to separately acquiring an intangible asset or acquiring an intangible through a business combination. Future economic benefits of an employee can also be enhanced by an employer through providing experience and training. This will be similar to an internally generated intangible asset.

Separately acquired intangible assets
IAS 38 (27) clarifies the cost included in separately acquired intangible assets.

"The cost of a separately acquired intangible asset comprises:

(a) its purchase price, including import duties and non-refundable purchase taxes, after deducting trade discounts and rebates; and
(b) any directly attributable cost of preparing the asset for its intended use."

Intangible assets through business combination

IAS 38 (33) explains the acquisition of intangible assets through business combination in accordance with IFRS 3 *Business Combinations*. "if an intangible asset is acquired in a business combination, the cost of that intangible asset is its fair value at the acquisition date."

Internally generated intangible assets

IAS 38 (52) advises that an internally generated intangible asset should be classified into a research phase and a development phase. If a person is already employed, the value of the internally generated asset will consist mainly of the development phase.

While it could be difficult to identify specific costs relating to the development of an employee, the cost could be viewed as the additional remuneration the employer is willing to pay due to the enhanced future benefits derived from experience and training.

Measurement after recognition

IAS 38 (72) clarifies that after initial measurement and recognition, the entity shall choose either the cost model or the revaluation model as accounting policy. It further states that; if an intangible asset is accounted for using the revaluation model, all the other assets in its class should also be accounted for using the same model, unless there is no active market for these assets.

IAS 38 (73) defines a *class* of intangible assets. "A class of intangible assets is a grouping of assets of a similar nature and use in an entity's operations. The items within a class of intangible assets are revalued simultaneously to avoid selective revaluation of assets and the reporting of amounts in the financial statements representing a mixture of costs.

IAS 38 (74) *Cost model*

"After initial recognition, an intangible asset shall be carried at its cost less any accumulated amortisation and any accumulated impairment losses."

IAS 38 (75) *Revaluation model*

"After initial recognition, an intangible asset shall be carried at a revalued amount, being its fair value at the date of the revaluation less any subsequent accumulated amortisation and any

subsequent accumulated impairment losses. For the purpose of revaluations under this standard, fair value shall be determined by reference to an active market. Revaluations shall be made with such regularity that at the end of the reporting period the carrying amount of the asset does not differ materially from its fair value."

The workforce of a company is dynamic, constantly changing. Experienced, high earning individuals resign or retire. Inexperienced low earning individuals are employed. Expansion or curtailment of the workforce may occur. A change in economic conditions and business activities may change the value of the workforce. For these reasons, it is recommended that the revaluation model is applied to the human capital asset and that a revaluation is performed at least once annually.

2.6.3 Useful life of intangible assets

IAS 38 (88-96) defines the useful life of an intangible asset. The useful life can be measured either in number of years or in number of units. This paragraph describes the useful life of an intangible asset. It also explains the amortisation of an asset with a finite useful life and the amortisation of an asset with an infinite useful life.

The useful life of an intangible asset is:

(a) the period over which an asset is expected to be available for use by an entity; or

(b) the number of production or similar units expected to be obtained from the asset by an entity.

Finite vs. infinite useful life

IAS 38 (88) explains that an entity should firstly decide whether the useful life of an intangible asset is finite or infinite. If the useful life is finite, the entity should determine the length of the useful life or the number of units to be produced.

"An intangible asset shall be regarded by the entity as having an infinite useful life when, based on an analysis of all of the relevant factors, there is no foreseeable limit to the period over which the asset is expected to generate net cash inflows for the entity."

IAS 38 (97-106) ***Amortisation of intangible assets with finite useful life***

IAS 38 (97) explains that the depreciable amount of an intangible asset with a finite useful life is allocated on a systematic basis over its useful life.

"*Depreciable amount* is the cost of an asset, or other amount substituted for cost, less its residual value." Amortisation begins when the asset is available for use. It is available for use when the asset is in the location and condition necessary for it to be capable of operating in the manner intended by management.

Amortisation discontinues at either the date that the asset is classified as held for sale (or included in a disposal group that is classified as held for sale) in accordance with IFRS 5 *Non-current Assets Held for Sale and Discontinued Operations* or the date that the asset is derecognised, whichever comes first.

Different methods can be used to allocate the depreciable amount over its useful life. This can be the straight-line method, the diminishing balance method or the unit of production method.

"The amortisation period and the amortisation method for an intangible asset with a finite useful life shall be reviewed at least at each financial year-end. If the expected useful life of the asset is different from previous estimates, the amortisation period shall be changed accordingly. If there has been a change in the expected pattern of consumption of the future economic benefits embodied in the asset, the amortisation method shall be changed to reflect the changed pattern. Such changes shall be accounted for as changes in accounting estimates in accordance with IAS 8 *Accounting Policies, Changes in Accounting Estimates and Errors*."

IAS 38 (107-110) ***Amortisation of intangible assets with infinite useful life***

"An intangible asset with an infinite useful life shall not be amortised."

In line with IAS 36 *Impairment of Assets,* an entity should test an intangible asset with an infinite useful life for impairment:

(a) annually, and

(b) whenever there is an indication that the intangible asset may be impaired.

This is done by comparing the asset's recoverable amount with its carrying amount.
"The useful life of an intangible asset that is not being amortised shall be reviewed each period to determine whether events and circumstances continue to support an indefinite useful life assessment for that asset. If they do not, the change in the useful life assessment from indefinite to finite shall be accounted for as a change in an accounting estimate in accordance with IAS 8."

The entity tests an asset for impairment by comparing its recoverable amount with its carrying amount. The excess of the carrying amount over the recoverable amount is then recognised as an impairment loss.

Useful life of human capital

Human capital has a finite useful life. Employees are derecognised or disposed of as intangible assets when they retire, are dismissed or resign from the company. The useful life of an intangible asset is the period over which an asset is expected to be available for use by a company. The number of years that employees are in service of the company can be seen as the useful life of human capital.

The useful life of employees is discussed in more detail in paragraph 2.7.

2.6.4 IAS 38 (112-117) Retirement and disposal of intangible assets

"An intangible asset shall be derecognised:

(a) on disposal; or

(b) when no future economic benefits are expected from its use or disposal."

The difference between the net disposable proceeds (if any) and the carrying amount of the asset is the gain/loss arising from the derecognition. This shall be recognised as profit or loss when the asset is derecognised.

2.6.5 Summary

In order for an intangible asset to be recognised on the statement of financial position, it needs to fulfil certain recognition criteria. This also applies to human capital. After these criteria have been met, measurement can take place. There are different methods to measure and report on intangible assets. These methods were briefly explained in paragraph 2.6.2. Measurement of human capital is explained extensively in paragraph 2.7. Intangible assets can either have an infinite or finite useful life. Paragraph 2.6.3 illustrates that human capital has a finite useful life.

2.7 MEASUREMENT OF HUMAN CAPITAL

Paragraph 2.6.2 details the measurement of intangible assets. This section focuses specifically on the measurement of human capital. Initial measurement, measurement after recognition and the amortisation over its useful life is discussed.

2.7.1 Cost associated with human capital

According to IAS 38 (24), an intangible asset should be measured initially at cost. IAS 38 (27) elucidates on the cost included in separately acquired intangible assets.

"The cost of a separately acquired intangible asset comprises:

(a) its purchase price, including import duties and non-refundable purchase taxes, after deducting trade discounts and rebates; and

(b) any directly attributable cost of preparing the asset for its intended use."

The cost associated with human capital is equivalent to the benefits paid over the employees' working life. The cost at initial recognition of human capital as an intangible asset is the present value of future benefits to the company.

Benefits paid to employees include any cost associated with future services, which will be rendered to the company. The IFRS: The Conceptual Framework for Financial Reporting (2010) clearly states in paragraph 4.4 (a) that an asset is "a resource, controlled by the entity as a result of past events and from which future economic benefits are expected to flow to the

entity." The focus is specifically on *future economic benefits.* Thus, any cost that has already been paid to employees will not be included in the recognition of human capital as an intangible asset, because benefits have already been utilised by the company.

These costs are mainly included in the gross salary of the employees. Any financial incentive or bonus included or declared in the contract of the employee for services, which will be rendered in the future, is also included in this initial cost. The latter is however not accessible from a company's annual report.

2.7.2 Initial measurement of human capital

When someone is employed by a company, the company obtains the future economic benefits of the person over the expected term of employment. The company also incurs an obligation at the same time. It is committed to remunerate the employee over the expected term of employment.

On initial recognition, the asset that the company obtains is measured as the present value of future benefits, measured as remuneration, also taking into account that normal cost of living increases over the term of employment. An equivalent amount will also be recognised as a liability. A liability is incurred when the future economic benefits of an employee is recognised as an asset. Over the useful economic life of the employee, the employer has a commitment to make payments to the employee. Under traditional accounting practice, these payments are regarded as a salary and written off as an expense, according to the accounting treatment suggested by this study the payments will be regarded as paying off the liability incurred when acquiring the economic benefits of the employee.

The IFRS Conceptual Framework for Financial Reporting (2010) defines a liability in paragraph 4.4(b) as "A liability is a present obligation of the entity arising from past events, the settlement of which is expected to result in an outflow from the entity of resources embodying economic benefits." Treating the commitment to make future payments to the employee resulting from obtaining an asset from the employee as a liability, complies with the definition of a liability.

2.7.3 Measurement after initial recognition

After initial recognition, an intangible asset can either be measured by using the *cost model* or the *revaluation model*. Human capital is a long-term asset. Over the long-term, many variables that determine employee remuneration can change. In contrast with other assets, future employee benefits decline as the employee approaches retirement, but often not as a result reduced efficiency.

The value of the future economic benefits of a single employee can change as a result of:

- A change in the cost of living index (inflation rate).
- Increased remuneration above the cost of living index, resulting from improved qualifications, more responsibilities, promotion, etc.
- Remuneration increases below the cost of living index. Resulting from poor performance, financial problems of the company, reduced responsibilities or decline in working hours, etc.

Considering the long-term nature of employment and the many variables that determine the future economic benefits, it is recommended that future economic benefits should be determined by a revaluation every year.

The revaluation will require a revaluation of the asset as well as the liability. Assuming no changes to the original contract and material changes in other variables, the asset value should reduce every year because the employee is one year closer to retirement. The liability value should also reduce every year because a portion of it has been paid off.

The annual revaluation of the asset and liability is done as follows:

Revaluation of human capital asset

Calculate the present value of future economic benefits using the following variables:

Term Remaining estimated working life of employees.

Growth rate	Average inflation rate or another rate that is deemed to be more appropriate.
Discount rate	Desired return on assets before tax.
Employee cost	Employee-remuneration per annum for future services.

The present value will be the new carrying value of the asset. The difference between the new carrying value and the previous carrying value is written off as an impairment loss.

Revaluation of human capital liability

Calculate the present value of the obligation, using the following variables:

Term	Remaining estimated working life of employees
Discount rate	Cost of obtaining borrowed funds before tax.
Payment	At initial recognition and annually thereafter, the annual payment required to pay off the liability over the remaining term at the current interest rate should be calculated.

The liability will incur an annual interest charge that should be written off as an employee finance expense. It should also be noted that the annual remuneration payment, relating to future benefits would be greater than the payment required by the liability. This excess can be seen as the cost of maintaining the employee in good from and should be written off as an employee maintenance cost.

IAS 38 (97) explains that the depreciable amount of an intangible asset with a finite useful life is allocated on a systematic basis over its useful life. The *"depreciable amount"* is the cost of an asset, or other amount substituted for cost, less its residual value."

2.7.4 Useful life

As concluded in paragraph 2.6.3, human capital has a finite useful life. The number-of years that employees are in services of the company represents the useful life of human capital. This includes the period from initial appointment to retirement, dismissal or resignation.

With a very large workforce, it could be impractical to perform individual calculations for employees. The human capital calculations can then be performed for the workforce as a whole by working on an average remaining working life.

Assuming the average employee starts working at 20 years of age and retires at 65 years of age, the working life of the average employee should be close to 45 years. However, considering dismissals or early retirement, the actual working life of the average employee should be closer to 40 years. The remaining average working lives of all employees is thus estimated at 20 years.

2.7.5 Summary

In conclusion, human capital is recognised as an intangible asset. Initially the asset is measured at cost. After initial recognition, human capital is measured at an annual revaluation. Recognising the asset also requires recognising a corresponding liability that will be paid off over the remaining term of employment.

The effect on the financial statements will be an intangible asset and a long-term liability on the statement of financial position and a human capital expense in the notes to the comprehensive income statement. The expense will comprise three parts; namely, the impairment loss on the asset, the finance charges of the liability and the maintenance cost resulting from the excess payment.

The initial journal entries after recognising human capital as an asset would be as follows:

Dr	Human capital asset	xx
Cr	Human capital liability	xx

Thereafter, the journal entries would be as follows:

Dr	Employee finance charges expense	xx
Cr	Human capital liability	xx

Dr	Impairment loss	xx
Cr	Accumulated impairment loss	xx
Dr	Employee maintenance expense	xx
Dr	Human capital liability	xx
Cr	Employee benefits	xx
Dr/Cr	Taxation	xx
Dr/Cr	Deferred tax asset/liability	xx

2.8 CONCLUSION

Human capital is a major resource controlled by a company that is not recognised as an asset by traditional accounting practice. Throughout this chapter, it is clear that human capital meets the criteria of an asset and specifically an intangible asset. Human capital is an identifiable, non-monetary asset. It further satisfies the recognition criteria, for it is likely that future economic benefits associated with the item will flow to the entity and the cost of the asset can be measured with reliability. Human capital can thus be recognised as an asset on the annual financial statements. This chapter also investigated the measurement of human capital assets and made recommendations on the required calculations.

CHAPTER THREE

DETERMINING CURRENT HUMAN CAPITAL DISCLOSURES

3.1 INTRODUCTION

Following Chapter 2 in which it was determined that human capital complies with the definition of an asset, this chapter and the next will focus on the empirical research of this study. The main objective of this chapter is to determine how the companies selected for this study currently disclose human capital in their financial statements. Firstly, the research methodology is described, followed by a discussion of the companies used in the study. Consideration will further be given to the specific costs associated with employees and the current disclosures of human capital information in financial statements. The chapter will conclude with a discussion on the measurement of human capital as an asset.

3.2 RESEARCH METHODOLOGY

In order to extract relevant information from the annual financial statements of the companies included in the research, a checklist was generated to identify employee-related (human capital) costs that are disclosed in a company's financial statements. This checklist was drawn up by using both the HR scorecard and the human capital definition. The purpose of the checklist is to identify costs that could be recognised as assets. The latter is used in the present value calculation of human capital as detailed in Chapter 2.

All costs related to employees in financial statements are identified by using the above-mentioned checklist and displayed in Appendix 3. The costs for each company that can be recognised as assets are then measured and disclosed as intangible assets on the adjusted financial figures of the company. These results are provided in Chapter 4. The method for measuring and disclosing the human capital costs identified is described in section 3.5.

3.2.1 Population and sample

The population from which a sample was selected consists of companies listed on the Johannesburg Stock Exchange (JSE). The sample selected for this study comprises ten companies listed on the main board of the Johannesburg Securities Exchange (JSE). These ten companies represent six of the ten main categories as presented on the JSE main board and are considered a good representation of the JSE listed companies.

All ten companies chosen for this study are the leaders in their sectors in terms of market capitalisation. They conduct their main business in South Africa and their financial statements are presented in ZAR (South African Rand). The companies selected for this study are listed below. Where applicable, the group financial statements will be analysed.

Sector	***Company***
Basic materials	
Chemicals:	African Explosives and Chemical Industries Group Limited (AECI)
General mining:	African Rainbow Minerals Limited (ARM)
Platinum and precious metals:	Impala Platinum Holdings Limited (Implats)
Coal:	Exxaro Resources Limited
Industrials	
Electronic and electrical equipment:	Allied Electronics Corporation Limited (Altron)
Industrial engineering:	Hudaco Industries Limited
Consumer goods	
Beverages:	Distell Group Limited
Health care	
Pharmaceuticals and biotechnology:	Adcock Ingram Holdings Limited
Consumer services	
Food and drug retailers:	Pick n Pay Holdings Limited

Technology

Software and computer services: EOH Holdings Limited

Companies not selected for study

A few companies originally selected for the study, were not suitable for analysis. Reasons for excluding these companies from this study include:

- The main business of the company is not conducted in South Africa;
- The financial figures are not presented in South African Rand;
- Ambiguity in terms of the presentation of employee costs.

3.2.2 Company profiles

A short profile of each of the selected companies is presented below.

Basic materials

Chemicals: African Explosives and Chemical Industries Group Limited (AECI)

AECI (African Explosives and Chemical Industries) is a specialty chemicals and explosives company situated in South Africa. The company has growth potential in Africa, South America and South East Asia. The company operates in niche markets and is supported by leading technology, which is primarily developed in-house.

The company has invested R2 billion in a strategic capital investment programme in the last five years. This programme focuses on enhancing future growth in mining and manufacturing areas with emphasis on mining chemicals (AECI 2012).

General mining: African Rainbow Minerals Limited (ARM)

ARM (African Rainbow Minerals) is a diversified mining and minerals company in South Africa. The company was developed in 2004. In 2010, ARM completed its goal to double

production in the company's expanded portfolio of assets. The company's growth strategy focuses on projects in iron ore, coal, copper and nickel. (ARM 2012).

Platinum and precious metals: Impala Platinum Holdings Limited (Implats)

According to the company profile of Implats (2012), the company's main business is mining, refining and marketing of platinum group metals, nickel, copper and cobalt. In 2012, the company produced approximately 25 percent of platinum globally. In total, the group employs 46 700 people. The company is one of the most effective and lowest cost main platinum suppliers in the world.

Coal: Exxaro Resources Limited

According to Exxaro (2012), the company is one of South Africa's largest, most diversified mining companies listed on the JSE. Its portfolio consists of coal, mineral sands, base metals and industrial minerals. The company also holds a 20 percent interest in the Sishen Iron Ore Company.

Exxaro is South Africa's second largest coal producer and the third-largest producer of mineral sands globally.

Industrials

Electronic and electrical equipment: Allied Electronics Corporation Limited (Altron)

The company overview of Altron (2012) states that the group is primarily invested in telecommunications, multi-media, power electronics industries and information technology. The main subsidiaries of Altron are Allied Technologies Limited, Bytes Technology Group Limited and Power Technologies Limited.

The company's long-term commitment includes continually improving internal efficiency, investing in its people and business and growing by seeking appropriate acquisitions in its sector.

Industrial engineering: Hudaco Industries Limited

The company profile of Hudaco (2012) clarifies that the company specialises in the importation and distribution of quality industrial and security products in Southern Africa. The two focus areas are engineering consumables and customer related products.

The company has 20 000 customers in 100 physical locations in South and Southern Africa. The main customers of the company include the manufacturing sector, the mining sector, construction and automotive companies and security industries.

Consumer goods

Beverages: Distell Group Limited

This group was formed in 2000 by the merger of Stellenbosch Farmers' Winery and Distillers Corporation. With the group's main business in South Africa, Distell is now a company creating leading liquor brands for people the world over. The company has 5 000 employees and an annual turnover of more than R12 billion (Distell 2012).

Health care

Pharmaceuticals and biotechnology: Adcock Ingram Holdings Limited

Adcock Ingram (2010) states that the company began as a pharmacy in Krugersdorp 120 years ago. The company became a subsidiary of Tiger Brands in 1950 and as a result became delisted from the JSE some years later. The company was re-listed on the JSE as Adcock Ingram in August 2008 and currently has approximately 172.6 million ordinary shares in issue. The present Adcock Ingram drives the vision of being recognised as a leading, first-rate branded healthcare company.

Consumer services

Food and drug retailers: Pick n Pay Holdings Limited

Pick n Pay Holdings Limited has been listed on the JSE since 1968. The group is one of the largest and most successful retailers of food, clothing and general merchandise in Africa. Employing over 42 000 people, Pick n Pay has 775 stores which include Hypermarkets, Supermarkets and Family Stores. The group has an annual turnover of approximately R55.3 billion.

Technology

Software and computer services: EOH Holdings Limited

According to the company profile of EOH (2012), the company was first listed on the JSE in 1988. EOH provides specialised consulting, technology and outsourcing services to the financial industry, the mining sector and manufacturing industry.

The company believes that it differentiates itself on the quality of its people. Their employees combine business practice with technology to create optimum client solutions.

3.2.3 Methodology

The research is conducted by examining the 2011 annual integrated reports of the 10 companies selected for this study from the main board of the JSE. The checklist created in paragraph 3.3 is used to identify all employee-related costs that these companies have disclosed in their financial statements. This is created by using both the HR scorecard as well as the human capital definition. Costs that can be recognised as assets are emphasised. The latter is used in the present value calculation, where human capital is calculated as an asset rather than as an expense.

Important financial ratios are then calculated from the original set of financial statements as well as the adjusted financial statements - where human capital is represented as an asset (refer to Chapter 4 for a full list and description of these ratios). The difference in ratios from the original and adapted figures are compared and discussed in Chapter 4.

3.3 EMPLOYEE-RELATED COSTS

IAS 19 (8) defines employee benefits as "all forms of consideration given by an entity in exchange for service rendered by employees or for the termination of employment". This study will consider not only employee benefits, but also all costs related to employees. For instance, the cost to acquire employees may not be of direct benefit to the employee, but it has a cost implication for the company.

For the purpose of this study, employee-related costs will be divided into two focus areas: the human capital scorecard and the human capital definition by Keeley (2007:29). Due to the similarities between the HR scorecard and the human capital definition, some of the costs listed in these focus areas will overlap.

HR scorecard	**Human capital definition**
Acquire employees	Skills
Maintain employees	Experience
Develop employees	Motivation
Retention cost	

Table 1: Costs associated with employees
Source: Own research

3.3.1 HR scorecard

According to Boninelli and Meyer (2004:76), companies have dedicated practically no effort into measuring the outcomes or drivers of people-related capabilities. The HR scorecard serves to address such issues. Boninelli and Meyer (2004:83) further state that the HR scorecard should be used by HR departments that aim to add value to the performance of a company.

The HR scorecard measures four specific areas. Costs that are associated with each focus area of the HR scorecard are noted below. These costs were identified by using templates from company financial statements as well as IAS 19: Employee benefits.

Cost to acquire employees

- Internal and external recruitment
- Financial incentives

Cost to maintain employees

- Salaries and wages
- Directors' remuneration
- Medical contribution
- Pension contribution
- Leave pay
- Retirement plans
- Other contributions

Cost to develop employees

- Restructuring costs
- Training and development costs

Retention costs

- Termination benefits

3.3.2 Human capital

According to Ulrich (2002:12), organisations are realising that their competitive advantage is no longer only in their products, but in their people. The human capital definition has three important foundations as explained by Keeley (2007:29). Human capital is defined as "the knowledge, skills, competencies and attributes embodied in individuals that facilitate the creation of personal, social and economic well-being".

The knowledge, skills and competencies that facilitate well-being, have cost implications to a company. Costs are identified in each section by using templates from company financial

statements and IAS 19: Employee benefits. These costs are divided into the three core parts of the human capital definition.

Skills

- Training and development costs

Experience

- Professional development

Motivation to innovate

- Yearly bonuses
- Share-based payments
- Performance bonuses

3.3.3 Human capital checklist

The checklist for human capital costs is created by using the information as stated in Table 1. In the first column the definitions and elements of both the HR scorecard and human capital definitions are given. The second column provides information on the human capital costs that a company should disclose on its financial statements, as identified in section 3.3.2. The last column indicates whether these costs can be recognised as an asset.

The ability of the cost to be recognised as an asset depends on one essential characteristic: *future economic benefits.* If an element meets the definition of an asset, *future economic benefits* will flow to the company. Thus, any cost that has already been paid to employees, for services rendered in the past, will not be included in the recognition of human capital as an intangible asset. This is because benefits associated with this cost have already been received by the company.

Cost associated with employees (Table 1)	Cost identified in financial statements	Asset (Yes/No)
HR Scorecard		
Acquire employees	Internal and external recruitment	No
	Financial incentives	Yes
Maintain employees	Salaries and wages	Yes
	Directors' remuneration	Yes
	Medical contribution	Yes
	Pension contribution	Yes
	Leave pay	No
	Retirement plans	Yes
	Other contributions	Yes
Develop employees	Restructuring costs	No
	Training and development costs	Yes
Retention cost	Termination benefits	No
Human capital definition		
Skills	Training and development costs	Yes
Experience	Professional development	Yes
Motivation	Yearly bonuses	Yes
	Share-based payments	Yes
	Performance bonuses	No

Table 2: Human capital checklist

Source: HR Scorecard and human capital definition

As stated above, any cost that has already been paid to employees will not be recognised as an asset. From the *Human capital checklist* created in Table 2, these costs can be identified as internal and external recruitment, leave pay, restructuring costs, termination benefits and performance bonuses. Costs such as salaries and wages, is viewed as the cost of acquiring and maintaining the intangible asset that will yield future benefits. Only the costs that have the characteristics of intangible assets are used to calculate the total human capital for each company. Costs that cannot be classified as assets but are disclosed in the company financial

statements are included in each company's table in Appendix , but not used to calculate total human capital.

3.3.4 IDENTIFYING CURRENT HUMAN CAPITAL DISCLOSURES

This section serves to identify employee-related costs that companies currently disclose in their annual financial statements and integrated reports. Costs and the details on these costs are set out in Appendix 3 for each of the 2010 and 2011 financial years. The costs in Appendix 3 are identified by using the Human capital checklist created in Paragraph 3.3. Costs that should be recognised as an asset are highlighted and shortly summarised in this section from Appendix 3.

3.4.1 Company human capital disclosures

Chemicals: African Explosives and Chemical Industries Group Limited (AECI)

The total human capital disclosed for AECI is R2 617 048 000 in 2011 and R2 485 626 000 for 2010. The directors' remuneration is comprehensively reported in the integrated report of the company and both human capital amounts include large directors' remuneration fees.

In terms of financial reporting, AECI disclosed no information on recruitment or other costs to acquire employees. Nor did they disclose costs to develop employees, costs to enhance employee skills or experience. An assumption is made that these costs are included in the *general expenses* of the company.

General mining: African Rainbow Minerals Limited (ARM)

African Rainbow Mineral Limited disclosed R2 091 682 000 in human capital in 2011 and R1 630 118 000 in 2010. The company's human capital was comprehensively disclosed in the integrated report of the company. The only sections that were not reported on under *employee costs* were the costs to acquire employees as well as employee termination benefits.

Platinum and precious metals: Impala Platinum Holdings Limited (Implats)

Impala Platinum Holdings Limited disclosed a total of R6 768 674 680 in human capital in 2011 and R6 196 323 400 in 2010. The overall disclosure of human capital is fairly vague. The company mentions medical and other contributions in the notes to the financial statements, but no mention is made of actual amounts. The total remuneration of the directors is not included in the remuneration report and many calculations had to be done to calculate the total.

The only elements that are disclosed in the financial statement are the costs to motivate employees and the costs to maintain employees.

Coal: Exxaro Resources Limited

The total human capital disclosed for the company is R4 173 321 719 in 2010 and R 4 507 231 006 in 2011. In terms of financial reporting, Exxaro disclosed no information on costs to acquire employees, development costs or costs in terms of the skills and experience of employees. An assumption is made that these costs are included in the *general expenses* of the company, but cannot be fairly disclosed, as this is not broken down into specific elements.

The directors' remuneration is thoroughly reported in the integrated report of the company. An assumption is made that this remuneration is not included in the *salaries and wages* of the company and is thus separately disclosed.

Electronic and electrical equipment: Allied Electronics Corporation Limited (Altron)

The human capital disclosure of Allied Electronics Corporation Limited is fairly comprehensive and easy to interpret. The total human capital for 2011 is R3 732 000 000 and R3 617 000 000 for 2010. The only element that was vaguely reported on is the employer contributions. The total of the contributions was included under *other contributions* on the human capital table. These contributions include medical aid, pension and other company contributions.

Industrial engineering: Hudaco Industries Limited

In 2011, R1 482 700 000 was disclosed as human capital and R1 335 461 000 in 2010. Hudaco discloses the detail of four items on the human capital checklist: directors' remuneration, share-based payments, pension contribution and a general *employee cost* entry. The assumption is made that the pension contribution is included under the general employee cost entry as it is only mentioned very briefly in the financial notes.

Beverages: Distell Group Limited

Distell Group Limited presents a comprehensive human capital disclosure. The total human capital disclosed is R1 188 657 000 in 2011 and R1 108 787 000 in 2010. The company provides adequate detail on the costs to maintain employees as well as the costs to motivate employees. However, no mention is made of the costs to acquire and develop employees or retention costs.

Pharmaceuticals and biotechnology: Adcock Ingram Holdings Limited

Adcock Ingram Holdings Limited included a total of R720 486 000 as human capital expenses in 2011 and R1 009 158 000 in 2010. The amount disclosed for 2010 is much higher than in 2011 due to the disclosure of an abnormal item. This abnormal item relates to a once-off share-based payment expense in respect of a BEE transaction. In 2010, key management received an amount of R7 219 000 in bonuses, no bonuses were received in 2011. Since the bonus was not paid in 2011, this amount is included under performance bonuses as opposed to yearly bonuses. This is not included as human capital.

The overall human capital disclosure is fairly well presented with total staff costs being split into two categories: the costs included in cost of sales and the costs included in operating expenses.

Food and drug retailers: Pick n Pay Holdings Limited

The human capital expense disclosed for Pick n Pay Holdings Limited equalled R4 292 234 100 in 2011 and R4 074 898 800 in 2010. The overall disclosure of human

capital is quite comprehensive. The only elements not disclosed were the costs to acquire employees, medical contributions and restructuring costs. An assumption is made that these costs are included in the *general expenses* of the company.

Software and computer services: EOH Holdings Limited

EOH disclosed a total of R R453 131 972 for human capital in 2011 and R358 340 615 in 2010. The overall human capital disclosure of the company is very vague. The only items that are displayed are share-based payments, directors' remuneration and a general entry for *employee costs*, which was included under salaries and wages in Appendix 3. An assumption is made that medical aid, pension and other contributions are included in this total.

3.4.2 Summary

This section focused on costs that are disclosed in the financial statements of the companies selected for this study. The costs that can be recognised as assets were highlighted for every company in Appendix 3. A short summary on these costs was provided and general omissions on financial statements in terms of human capital were discussed. These costs are used in the present value calculations in paragraph 3.5.

3.5 MEASURING AND REPORTING HUMAN CAPITAL AS AN ASSET

In this section, the costs identified as assets in paragraph 3.4 are measured as intangible assets. These values were identified from the companies' 2010 and 2011 financial statements. This calculation is done by using the present value calculation as explained in Chapter 2.

3.5.1 Company growth rate, discount rate and borrowing rate

Each company's *growth rate, discount rate* and *borrowing rate* is identified or calculated for both the 2010 and 2011 financial years and where applicable, a more accurate rate is used, as explained in the section below.

Growth rate

As explained in Chapter 2, the growth rate used to predict future salary increases is the actuarial estimation of salary increases disclosed in each company's financial statements. This growth rate is identified for each of the 2010 and 2011 financial years and used in the present value calculation.

If no actuarial valuation is supplied in the financial statements, the 2012 inflation rate of 5.78 percent is used for both years. Due to the large impact that the growth rate has on the amortisation of the present value, as well as the fact that most growth rates increased in 2011 due to inflation, the *lowest* of the company growth rates and the most recent inflation rate is used for any or both the 2010 and 2011 calculations. The rate that is used is displayed in the table below.

Year	**Inflation (%)**
CPI South Africa 2012	5.78
CPI South Africa 2011	5.03
CPI South Africa 2010	4.09
CPI South Africa 2009	7.26
CPI South Africa 2008	10.06
CPI South Africa 2007	6.17

Table 3: Average inflation South Africa 2007-2012

Source: Inflation (2012)

Discount rate

The discount rate of each company is calculated for the financial year-end for each of the 2010 and 2011 financial years. It is assumed that companies would require a return on human capital similar to the return earned on other assets. The earnings before interest and tax (EBIT) are divided by the total assets of the company to achieve the desired rate. This is similar to the return on asset ratio. Since the net profit over total assets is used in this study to calculate the return on assets, these ratios are recalculated for each company and displayed in Table 5 and Table 6.

$$\text{Discount rate} = \frac{\text{Earnings before interest and tax}}{\text{Total assets}}$$

Borrowing rate

The borrowing rate refers to the average interest rate that each company is subject to. This is calculated by dividing the total interest expense by the interest bearing liabilities (current and non-current).

$$\text{Borrowing rate} = \frac{\text{Interest expense}}{\text{Interest bearing liabilities}}$$

This company borrowing rate may however be misleading at times. The interest bearing liabilities at year end will never be a true reflection of the company's liabilities. Due to this misleading rate, the lowest of the company borrowing rate and the South African prime interest rate for each of the 2010 and 2011 years is used.

An average prime interest rate of 9.9 percent for 2010 and 9 percent for 2011 is used as calculated from the table below. The average prime interest rate is calculated in terms of the number of days the prime interest rate was valid for each of the 2010 and 2011 financial years. The prime interest rate is also used if there is any ambiguity in the financial statements in terms of which liabilities are classified as interest bearing borrowings. The rate used is displayed in Table 5: Human capital calculation 2010 and Table 6: Human capital calculation 2011.

Date	**Prime interest rate (%)**
2012-07-19	8.5
2010-11-18	9.00
2010-09-09	9.50
2010-03-25	10.00
2009-08-13	10.50

Table 4: Historical prime interest rates South Africa 2009-2012.

Source: South African Reserve Bank (2012)

3.5.2 Human capital calculation

In Table 5 and Table 6, the costs identified as assets by using the Human Capital checklist in paragraph 3.4 are measured as intangible assets. These values were identified from the companies' 2010 and 2011 financial statements and the calculation is done by using the present value calculation as explained in Chapter 2.

Values in the two tables set out below are adjusted by derecognising employee-related costs as expenses and recognising them as assets. The first two columns provide information on the company name and *term*. As explained in Chapter 2, the *term* is based on the estimated average residual working life of all employees in a specific company. When having a very large workforce, it is impractical to perform individual calculations for employees. The remaining working life of employees is estimated at 20 years in 2010 and 19 years in 2011. For calculation purposes, it was assumed that the remaining useful lives of employees reduced from 2010 to 2011. Each company should be able to use the correct figure. The next three columns provide information on the *growth rate*, *discount rate* and *borrowing rate* of each company. Detail on these rates is provided in section 3.5.1.

The next three columns of each of the tables give information on human capital recognised as an asset, human capital recognised as a liability and human capital recognised as an expense/income. The portion of human capital recognised as an expense/income includes the impairment loss on the asset and the employee finance cost and employee maintenance cost on the liability. (Refer Chapter 2.7.3, page 30) These costs are calculated by using the formula provided in Chapter 2. Human capital recognised as an expense/income is the amount calculated that should be disclosed in the statement of comprehensive income for each year.

Since the accounting treatment and the income tax treatment will differ, a deferred tax asset or liability will arise. This is indicated in the last column. Due to the initial recognition of human capital as an asset and liability in 2010, no amortisation or finance charge is recognised for this period. As a result, no expense or deferred tax is recognised in this period.

As an example, the calculation of the Pick ‘n Pay results are set out in Appendix 1.

Company	Term	Growth rate (%)	Discount rate (%)	Borrowing rate (%)	Human capital asset	Human capital (liability)	Human capital expense/(income)	Deferred tax asset/(liability)
AECI	20 years	5.78	10.21	9.9	R32 651 005 394	(R32 651 005 394)	-	-
ARM	20 years	5.78	10.51	9.9	R21 256 851 744	(R21 256 851 744)	-	-
Implats	20 years	5.78	11.54	5.94	R74 385 876 352	(R74 385 876 352)	-	-
Exxaro	20 years	5.5	21.69	9.9	R25 630 172 665	(R25 630 172 665)	-	-
Altron	20 years	5.78	10.97	9.9	R45 435 673 352	(R45 435 673 352)	-	-
Hudaco	20 years	5.78	11.83	9.9	R15 672 728 034	(R15 672 728 034)	-	-
Distell	20 years	5.78	17.40	9.9	R8 838 266 446	(R8 838 266 446)	-	-
Adcock	20 years	5.78	8.25	7.21	R10 882 471 201	(R10 882 471 201)	-	-
Pick n Pay	20 years	5.78	16.34	9.9	R34 732 242 064	(R34 732 242 064)	-	-
EOH	20 years	5.78	13.38	5.33	R3 742 366 830	(R3 742 366 830)	-	-

Table 5: Human capital calculation 2010

Source: Own research

Company	Term	Growth rate (%)	Discount rate (%)	Borrowing rate (%)	Human capital asset	Human capital (liability)	Human capital expense/(income)	Deferred tax asset/(liability)
AECI	19 years	5.78	10.85	8.64	R32 168 357 462	(R32 074 423 958)	R4 907 080 436	R641 209 082
ARM	19 years	5.78	16.02	9	R17 882 056 220	(R20 881 478 736)	R5 866 343 177	R1 056 625 130
Implats	19 years	5.78	14.42	7.04	R64 225 898 363	(R72 350 650 860)	R14 263 570 911	R2 098 570 945
Exxaro	19 years	5.78	19.09	9	R32 052 269 873	(R25 177 571 541)	(R5 401 952 902)	(R2 774 571 494)
Altron	19 years	5.78	9.94	9	R51 512 043 519	(R44 633 328 510)	(R9 762 001)	(R1 047 693 360)
Hudaco	19 years	5.78	13.80	9	R14 678 049 845	(R15 395 964 610)	R2 891 941 763	R394 587 694
Distell	19 years	5.78	17.44	9	R9 304 694 144	(R8 682 192 222)	R250 966 284	(R262 553 401)
Adcock	19 years	5.75	8.75	4.95	R10 470 707 789	(R10 623 042 990)	R1 519 957 971	R223 852 152
Pick n Pay	19 years	5.78	12.86	9	R45 402 218 897	(R34 118 908 240)	(R747 189 318)	(R3 293 955 638)
EOH	19 years	5.78	14.22	2.40	R4 358 335 348	(R3 633 078 262)	(R560 875 618)	(R283 922 125)

Table 6: Human capital calculation 2011

Source: Own research

3.5.3 Summary

In this section, each company's growth rate, discount rate and borrowing rate were identified or calculated for both the 2010 and 2011 financial years. If applicable, a more accurate rate was used. The total for each company's human capital was also calculated and displayed in Table 5 and Table 6. The human capital is displayed in three sections: human capital as an asset, human capital as a liability and human capital as an expense. The latter should be disclosed in the company's statement of comprehensive income.

Whether human capital is recognised as an income or an expense on the statement of comprehensive income largely depends on whether the human capital asset has increased or decreased between 2010 and 2011. If the human capital asset were to decrease, amortisation would occur resulting in a large expense being recognised on the statement of comprehensive income.

3.6 CONCLUSION

In this chapter, the current human capital disclosures of the ten companies selected for this study were explored and the detail on the human capital disclosures is included in Appendix 3. Information on the companies selected for this study is supplied in the first section of this chapter.

Employee-related costs that are disclosed in these companies' financial statements were identified by means of a human capital checklist. The purpose of the checklist is to identify costs that can be recognised as assets and these costs are set out in Appendix 3. A short overview of costs identified by using the checklist is given in section 3.4.1 of this chapter.

Throughout this chapter, it is clear that there are some general omissions regarding the human capital and employee costs recognition on companies' financial statements. The way in which human capital is reported varies from company to company. General shortcomings on human capital reporting for each of the companies are described in section 3.4.1 and highlighted in Chapter 5.

Lastly, costs that can be recognised as assets in Appendix 3 were measured and disclosed as intangible assets and set out in Tables 5 and 6 by using the present value formula as described in Chapter 2. In these tables, human capital is displayed in three sections: human capital as an asset, human capital as a liability and human capital as an expense. The latter should be disclosed in the company's statement of comprehensive income for the 2011 financial year.

The amounts recognised as a human capital asset are far larger than expected, with R74 385 876 352 being recognised for Implats is 2010. This is due to a combination of the term (20 years), the growth rate of the company and the total human capital expense in the original statement of comprehensive income of the company.

In Chapter 4, the focus is on using financial ratio analysis as a tool for decision making. In order to assist users in making decisions based on a company's financial statements, an interpretation of the financial statements is required. The human capital asset, liability and expense identified in Tables 5 and 6 above are used to adapt the financial figures of each company selected for this study. Financial ratios are then calculated for both the original financial statements and the adjusted financial statements of the ten selected companies.

CHAPTER FOUR

THE IMPACT ON DECISION MAKING

4.1 INTRODUCTION

In Chapter 3, the financial statements of the selected companies were amended to reflect the capitalisation of human capital. In this chapter, the impact of the amendments will be investigated by examining the effect that the adjusted financial statements have on decision making.

The focus of this chapter is on decision making by using financial ratio analysis. The purpose of financial statements is to enable users to make economic decisions. In order to assist users in making decisions, an interpretation of the financial statements is required. A financial ratio analysis is often used as a tool in interpreting financial information. The essential financial ratios required to interpret the financial statements and the effect on decision making will be considered.

The purpose of this chapter is to determine how the reclassification of human capital as an asset will affect the interpretation of financial statements. Relevant ratios are calculated for both the original financial statements and the adjusted financial statements of the ten companies selected for this study. The new financial ratios are then compared with the original financial analysis and their impact on decision making examined. The 2010 and 2011 financial ratios of the companies are calculated.

4.2 FINANCIAL RATIO ANALYSIS

According to Drake (2012:1), a ratio is a mathematical relation between one quantity and another. He further states that the specific ratios chosen for financial analysis depend on two main factors:

- the company that is being analysed; and
- the type of analysis required.

This paragraph explains the uses of financial ratio analysis as well as the general financial ratios used for decision making by the stakeholders of a company.

4.2.1 Financial ratio analysis as a decision-making tool

Drake (2012:1) explains that financial analysis is "the selection, evaluation, and interpretation of financial data, along with other pertinent information, to assist in investment and financial decision making." He, in addition, confirms that financial analysis is an important source of decision making for all stakeholders of a company. It is used to evaluate important issues such as the performance of employees, operational efficiency and credit policies.

Correia *et al.* (2007:5.6) furthermore state that managers use financial analysis to assist themselves in exercising control in the company. Evaluation of the company provides information as to important changes in underlying financial operating conditions.

Taking note of Drake (2012:1) and Correia's *et al.* (2007:5.6) statements above, it must be emphasised that a ratio analysis in itself provides no additional information. A ratio analysis is a mechanical operation that takes apart. It merely reduces large numbers into smaller indices. It is the intention of an analyst to obtain a better understanding of the figures by performing a ratio analysis. This better understanding will then assist in undertaking an interpretation that will be used in making decisions. Value is obtained by interpreting financial statements. A ratio analysis is only one of the tools used in interpretation.

4.2.2 Users of financial statements

According to Correia *et al.* (2007:5.5-5.7), different categories of analysts have specific information requirements. They describe several of these stakeholders in detail as set out below.

Equity investors

These are the suppliers of the company's capital. The investors of the company have primary claim to income and capital on liquidation of the company, after the claims of creditors and preference shareholders. They further receive profit in the form of dividends.

Consequently, equity investors would demand comprehensive information on the financial position of the company. This includes information on profitability, liquidity, capital structure and valuation.

Credit grantors

Credit grantors provide a company with long-term and short-term credit. As a result, if a firm is not profitable, the firm will seize interest payments on the credit and the grantors could lose their capital.

The credit grantors will therefore be particularly interested in the cash flow of the company, the capital structure and security. In terms of short-term credit, this analysis includes the liquidity, current assets and rate of turnover. In the case of long-term credit, grantors would be interested in future profitability and cash flow analysis.

Management

As management has unlimited access to financial information, they mainly use financial analysis in exercising control and viewing the firm in the way that outsiders would see it.

Employees

Union analysts study the financial results of a company to evaluate whether the workforce is being exploited. A particular financial ratio is the relationship between profitability and the remuneration paid to employees. Employees would also be interested in the long-term profitability of the firm.

Acquisition and merger analyst

It is important for analysts to determine the value of a company as a whole before making decisions on acquisition or mergers. This is particularly of value in determining the synergic benefits, the valuation of assets, goodwill and liabilities that will be transferred.

Auditors

Auditors use financial analysis, as an analytical review procedure to detect errors and irregularities on the financial statements of a company. Financial analysis further assists the auditor in gaining a deeper insight and thorough understanding of the audited company.

Other interested parties

Many other groups could use financial statement analysis. The South African Revenue Service (SARS) may check the income tax returns and VAT of a company. Customers could determine the stability of supply from the company and the value of their warranties. Suppliers to the company will be particularly interested in expanding markets that the company could have an influence in (Correia *et al.,* 2007:5.5-5.7).

Different users have different needs. When doing an analysis and interpretation of financial statements, the specific users should be identified in order to make the analysis relevant.

4.2.3 Limitations of a ratio analysis

It was stated above that a ratio analysis reduces large numbers to smaller indices that can be better understood. It also has to be recognised that important information determining the financial position of a company is not reflected in ratios, or is destroyed in the analysis process.

Ratios are only calculated on the figures in financial statements. Other relevant information such as the skills of employees and management is not reflected. A ratio in itself is usually meaningless. It only acquires meaning when it is compared to another indicator. The question arises as to what a meaningful and reliable indicator is, which could be used for comparison. The wrong message may be conveyed when comparing bad to worse.

Perhaps the biggest shortcoming of a ratio analysis is that it breaks down. The information on the synergy benefits of the whole are lost during an analysis. The performance of the whole cannot be understood by looking at the parts.

It must be understood that the contribution of ratio analysis to decision making is limited and does not provide any conclusive answers.

4.3 CATEGORIES OF FINANCIAL RATIOS

Financial ratios can be grouped according to the elements in the financial statements that they affect. It must be emphasised that ratios should not be viewed in isolation, as a ratio in one group also has an effect on ratios in other groups. Care should be taken not to draw conclusions from one ratio or group of ratios without considering the ratios in the other groups. These ratios are divided into five main categories, which include liquidity ratios, asset management ratios, debt management ratios, profitability ratios and cash flow ratios.

For the purpose of this study, ratios are calculated in order to compare the financial statements of a company to what they would have been, had human capital been capitalised as an asset. The effect on the financial statements is considered in order to determine whether the proposed changes allow for better disclosure and decision making. It is not the intention of the ratio analysis to provide a basis for drawing conclusions on the financial position of the company.

Disclosing human capital as an asset will result in the following changes in the financial statements:

- Profit before and after tax
- Total assets and intangible assets
- Total liabilities
- Total equity
- Interest expense
- Tax (the allocation between current- and deferred tax).

The groups of ratios that need to be calculated therefore are asset management ratios, debt management ratios and profitability ratios. The liquidity and cash flow of the company should not be affected by the change.

Correia *et al.* (2007:5.13-5.20) provide information on these categories.

4.3.1 Asset management ratios

These ratios measure how effectively assets are utilised. In particular, these ratios determine whether the company's investment in assets is justified. These ratios are of particular interest when recognising human capital as an asset on the financial statements.

Fixed asset (property, plant and equipment) turnover

This ratio represents the application of property, plant and equipment, in relation to gross revenue.

$$\text{Fixed asset turnover} = \frac{\text{Revenue}}{\text{Property, plant and equipment}}$$

As property, plant and equipment will not change, the following ratio will be more meaningful in this study:

$$\text{Asset utilisation} = \frac{\text{Gross profit}}{\text{Total assets}}$$

This ratio will indicate the investment in assets required to earn gross profit.

4.3.2 Debt management ratios

The financial leverage of a firm has many implications; therefore, debt management plays an important role in financial management. The more financial leverage a firm has, the higher the financial risk will be. There are two features of financial leverage: a change in financial risk and implications on the return for shareholders.

The debt management ratios below will evaluate the impact of financial leverage.

Debt ratio

This represents the total debt of a company compared to its total assets. The higher the debt ratio, the higher the financial risk of the company.

$$\text{Debt ratio} = \frac{\text{Total debt}}{\text{Total assets}}$$

Debt to equity

This ratio represents the amount of debt covered by shareholders funds. It measures the total debt of a company in relation to the total equity.

$$\text{Debt: equity ratio} = \frac{\text{Total debt}}{\text{Total equity}}$$

Both these ratios provide the same information. These ratios provide information on the degree of solvency of the company. The proposals made in this study changes the assets and liabilities on the statement of financial position. These ratios should provide useful information on the effects of the proposed changes.

Times interest earned

The times interest earned ratio measures the extent to which earnings can decrease before causing financial losses to the company. Failure to meet the interest commitment of a company could lead to insolvency.

$$\text{Times interest earned} = \frac{\text{Earnings before interest and tax}}{\text{Interest}}$$

The proposed changes in this study will change the interest expense and the profit. This ratio would indicate the effect of the proposed changes on the *statement of comprehensive income.*

4.3.3 Profitability ratios

Profitability ratios will reflect the collective effect of liquidity, asset management and debt management on operating outcomes.

Net operating profit margin

This ratio measures the earnings before interest and tax of a company in relation to its total revenue.

$$\text{Net operating profit margin} = \frac{\text{Earnings before interest and tax}}{\text{Gross revenue}}$$

This ratio will indicate to what extent the profitability of a company has changed as a result of the proposed adjustments. Profitability is a key determinant in financial performance and influences other prominent ratios such as *earnings per share* and the *price earnings* ratio.

Return on total assets

This ratio measures the profitability of the firm in relation to its total assets. This is also referred to as the return on investment ratio.

$$\text{Return on total assets} = \frac{\text{Net profit after tax}}{\text{Total assets}}$$

Return on equity

This ratio measures the total profitability in relation to total shareholders' funds.

$$\text{Return on equity} = \frac{\text{Net profit after tax}}{\text{Total shareholder funds}}$$

The return on equity and return on asset ratios contain useful information and are regarded as very important by investors. The return ratios acquire meaning when compared to returns available in the financial markets, and are used by investors when comparing different

investment alternatives. In this study, the effect of the proposed changes on the return ratios should be highly informative.

Leverage ratio

Additional information can be obtained if the return on asset ratio and the return on equity ratio are combined into one ratio, namely the leverage ratio.

$$\text{Leverage ratio} = \frac{\text{Return on equity}}{\text{Return on total assets}}$$

This ratio explains the leverage benefit of debt finance. If the ratio is less than one, the company is facing serious financial difficulties. The ratio should be more than one and the higher it is, the less risk the company is exposed to.

4.3.4 Human capital asset ratio

In this section, the total employee-related cost that can be recognised as an asset is measured as a percentage the company's total assets before the recognition of human capital as an asset. These ratios are calculated from each of the ten companies' original 2010 and 2011 financial statements. This ratio is particularly important in understanding the extent to which the recognition of human capital as an asset influences the financial structure of a company.

$$\text{Human capital asset ratio} = \frac{\text{Human capital}}{\text{Total assets}}$$

In the ratios calculated, human capital refers to the employee-related costs that can be recognised and measured as assets as identified in section 3.4.1 and tabled in Appendix 3.

4.3.5 Summary

The above ratios should provide a basis for comparison between the original financial statements and the adjusted financial statements.

4.4 FINANCIAL RATIO ANALYSIS

In this section, the financial ratios as discussed in paragraph 4.3 are calculated using the data from the companies' original financial statements. As the financial statements for the 2011 financial year are used, the ratios for both the 2010 and 2011 financial year are calculated and shortly discussed. All ten companies selected for this study are analysed. As an example, the adjustments to the Pick 'n Pay financial figures are shown in Appendix 2.

After human capital has been measured and recognised as an asset, as explained in Chapter 2, financial ratios are recalculated and the adjusted figures shown. The difference in ratios between 2011 and the adjusted figures for 2011 is then discussed.

Chemicals: African Explosives and Chemical Industries Group Limited (AECI)

Table 7: AECI Ratio Analysis

Source: Own research

	Original		**Adjusted**
	2010	**2011**	**2011**
	R'000	**R'000**	**R'000**
Financial figures			
Intangible assets	77 000	-	32 168 357
Other assets*	10 237 000	12 457 000	13 098 209
Total assets	10 314 000	12 457 000	45 266 566
Total liabilities	5 846 000	7 243 000	39 317 424
Total equity	4 058 000	5 214 000	5 949 142
Revenue	11 569 000	13 397 000	13 397 000
Gross profit	1 062 000	1 316 000	1 316 000
EBIT**	1 053 000	1 351 000	2 293 418
Interest expense	175 000	236 000	3 468 450
Profit before tax	873 000	1 144 000	(1 175 032)
Tax	233 000	306 000	(335 209)
Profit after tax***	640 000	838 000	(839 823)
Financial ratios			
Asset utilisation	10.30%	10.56%	2.91%
Debt ratio	56.68%	58.14%	86.86%
Debt: equity ratio	144.06%	138.91%	660.89%
Times interest earned	6.02 times	5.72 times	0.66 times
Net operating profit	9.10%	10.08%	17.12%
Return on total assets	6.21%	6.73%	(1.86%)
Return on equity	15.77%	16.07%	(14.12%)
Leverage ratio	2.54	2.39	7.59
Human capital asset ratio	359.48%	358.22%	-
Growth rate	5.78%	5.78%	-
Discount rate	10.21%	10.85%	-
Borrowing cost rate	9.9%	8.64%	-

***** **Total assets minus intangible assets**
****** **Earnings before interest and tax**
******* **Net profit from continuing activities**

General impact

Both the 2010 and 2011 financial years indicate human capital to total asset ratios of above 350 %. This indicates a significant investment in employee related costs in relation to total assets and is mainly attributable to the directors' remuneration of R34 626 000 paid in 2010 and R42 048 000 paid in 2011. Because of the large amount of directors' remuneration paid in both 2010 and 2011, the human capital amount recognised as an asset is very large.

For AECI, human capital recognised as an asset decreased slightly from R32 651 005 394 in 2010 to R32 168 357 462 in 2011. Due to this, amortisation has arisen and is recognised as an expense on the Statement of Comprehensive Income. The amortisation, along with the large interest expense that arose from the liability recognition, resulted in the profit after tax decreasing to (R839 823 000). This had a significant impact on the company's financial ratios with some ratios becoming negative.

The company's asset utilisation ratio decreased from 10.56% to 2.91% in 2011. This is due to the significant increase in assets after the recognition of human capital as an asset and the gross profit that remains unaffected. The total assets of the company increased by 263.38% after the human capital asset recognition. Assets further increased because of the temporary tax difference that arose. The debt ratio increased from 58.14% to 86.86% due to the larger proportional increase in liabilities over assets. Total liabilities for the company increased by 442.83% to R39 317 424 000 after the human capital asset and liability recognition. The debt equity ratio increased from 138.91% to 660.89% due to the increase in liabilities.

The times interest earned ratio decreased from 5.72 times to 0.66 times indicating that the company would not be able to carry its finance costs if it were to recognise human capital as an asset. The ratio decreased due to the large interest expense that arose from the human capital recognition.

The net operating profit ratio measures the profit before interest and tax of a company in relation to its total revenue. The earnings before interest and tax of the company increased from R1 351 000 000 to R2 293 418 000. This is due to the temporary difference between the company's original human capital expense and the amortisation and maintenance cost

after recognising human capital as an asset. Because of this, the net operating profit margin increased from 10.08% to 17.12%.

The return on total assets ratio decreased from 6.73% to (1.86%) and the return on equity ratio decreased from 16.07% to (14.12%). This is due to the profit after tax decreasing by 200.22% from R838 000 000 to (R839 823 000).

Impact on risk and return

The overall effect on the company's financial figures and financial ratios is quite significant. Although the company's net operating profit margin increased from 10.0% to 17.2%, both the return on assets and return on equity ratios decreased and became negative. This is due to the decrease in profit after tax of the company due to the increased interest expense.

General mining: African Rainbow Minerals Limited (ARM)

Table 8: ARM ratio analysis
Source: Own research

	Original		Adjusted
	2010	**2011**	**2011**
	R'000	**R'000**	**R'000**
Financial figures			
Intangible assets	212 000	202 000	18 084 056
Other assets*	28 021 000	32 107 000	33 163 625
Total assets	28 233 000	32 309 000	51 247 681
Total liabilities	9 704 000	10 194 000	31 075 479
Total equity	18 529 000	22 115 000	20 172 202
Revenue	11 425 000	15 357 000	15 357 000
Gross profit	3 542 000	5 941 000	5 941 000
EBIT**	2 966 000	5 176 000	3 506 767
Interest expense	192 000	216 000	2 320 428
Profit before tax	2 983 000	5 941 000	1 186 339
Tax	1 009 000	1 671 000	614 375
Profit after tax***	1 974 000	3 505 000	571 964
Financial ratios			
Asset utilisation	12.55%	18.39%	11.59%
Debt ratio	34.37%	31.55%	60.64%
Debt: equity ratio	52.37%	46.10%	154.05%
Times interest earned	15.45 times	23.96 times	1.51 times
Net operating profit	25.96%	33.70%	22.83%
Return on total assets	6.99%	10.85%	1.12%
Return on equity	10.65%	15.85%	2.84%
Leverage ratio	1.52	1.46	2.54%
Human capital asset ratio	5.77%	6.48%	-
Growth rate	5.78%	5.78%	-
Discount rate	10.51%	16.02%	-
Borrowing cost rate	9.9%	9%	-

***** **Total assets minus intangible assets**
****** **Earnings before interest and tax**
******* **Net profit from continuing activities**

General impact

The financial figures of the company present a human capital asset ratio of 5.77% in 2010 and 6.48% in 2011. This indicates a rather small human capital investment in relation to the company's total assets.

The company's total human capital recognised as an asset decreased from R21 256 851 744 in 2010 to R17 882 056 220 in 2011. This resulted in amortisation and an expense being recognised on the statement of comprehensive income. The amortisation together with the interest expense incurred that arose from the liability recognition, resulted in the profit after tax of the company decreasing from R3 505 000 000 to R571 964 000. This, together with the increase in total assets and total liabilities, affected the company's financial ratios significantly.

The company's asset utilisation ratio decreased from 18.39% to 11.59%. This is due to the increase in assets after the recognition of human capital as an asset and the gross profit that remains unaffected. Total assets increased by 58.62% from R32 309 000 000 to R51 247 681 000 after the recognition of human capital as an asset. Because of the human capital to asset ratio of 6.48%, a smaller decrease in this ratio is noted than on some of the other companies in this study.

The debt ratio of the company increased from 31.55% to 60.64% due to the increase in both assets and liabilities. Total liabilities of the company increased by 204.84% from R10 194 000 000 to R31 075 479 000 after the recognition of human capital as an asset. Similarly, the debt equity ratio of the company increased from 46.10% to 154.05% due to this significant increase in liabilities.

The company's times interest earned ratio decreased from 23.96 times to 1.51 times, indicating that the company would struggle to carry its finance costs and other operating expenses if it were to recognise human capital as an asset. The ratio decreased due to the large interest expense that arose from the human capital liability recognition.

The net operating profit margin of the company decreased from 33.70% to 22.83% due to the earnings before interest and tax of the company decreasing by 47.60% from R5 176 000 000

to R3 506 767 000. The earnings before interest and tax decreased because of the amortisation expenses recognised in the 2011 adjusted figures.

The company's return on total assets ratio decreased from 10.85% to 1.12%. This is due to the profit after tax of the company decreasing by 83.68% from R3 505 000 000 to R571 964 000 because of the increased interest expense and amortisation flowing down into profit after tax. For the same reason, return on equity of the company decreased from 15.85% to 2.84%.

Impact on risk and return

The impact on the company was quite significant, however none of the ratios calculated became negative. The net operating profit margin of the company decreased from 33.70% to 22.83% due to the decrease in earnings before interest and tax because of the increased amortisation. This, together with the interest expense of the company affected the profit after tax figure. Both the return on assets as well as the return on equity ratios decreased due to this.

Platinum and precious metals: Impala Platinum Holdings Limited (Implats)

Table 9: Implats ratio analysis
Source: Own research

	Original		Adjusted
	2010	**2011**	**2011**
	R'000	**R'000**	**R'000**
Financial figures			
Intangible assets	1 018 000	1 018 000	65 243 898
Other assets*	61 553 000	66 586 000	69 702 571
Total assets	62 571 000	67 604 000	134 946 469
Total liabilities	16 838 000	17 994 000	90 344 651
Total equity	45 733 000	49 610 000	44 601 818
Revenue	25 446 000	33 132 000	33 132 000
Gross profit	8 152 000	11 642 000	11 642 000
EBIT**	7 223 000	9 748 000	(97 050)
Interest expense	319 000	530 000	4 948 521
Profit before tax	7 225 000	9 561 000	(4 851 471)
Tax	2 431 000	2 751 000	(652 429)
Profit after tax***	4 794 000	6 810 000	(4 1 99 042)
Financial ratios			
Asset utilisation	13.03%	17.22%	8.63%
Debt ratio	26.91%	26.62%	66.95%
Debt: equity ratio	36.82%	36.27%	202.56%
Times interest earned	22.64 times	18.39 times	(0.02 times)
Net operating profit	28.39%	29.42%	(0.29%)
Return on total assets	7.66%	10.07%	(4.08%)
Return on equity	10.48%	13.73%	(12.34%)
Leverage ratio	1.37	1.36	3.03
Human capital asset ratio	9.90%	10.01%	-
Growth rate	5.78%	5.78%	-
Discount rate	11.54%	14.42%	-
Borrowing cost rate	5.94%	7.04%	-

* **Total assets minus intangible assets**
** **Earnings before interest and tax**
*** **Net profit from continuing activities**

General impact

The human capital asset ratio of Implats increased from 9.9% for 2010 to 10.01% for 2011. The ratio indicates a rather small investment in human capital in comparison to the company's total assets. The company's human capital recognised as an asset decreased from R74 385 876 352 in 2010 to R64 225 898 363 in 2011. The decrease in human capital recognised is largely due to the decrease in company share based payments between 2010 and 2011 as well as the effect of recognising human capital over 19 years in 2011 as opposed to 20 years in 2010. The large human capital amount recognised is mainly attributable to the large number of people that Implats employs. As of 2011 the company employed over 46 700 people. R6 305 000 000 was paid towards the salaries and wages of these employees in 2011 and average salaries and wages of R135 010.70 per employee.

Due to the decrease in human capital recognised as an asset, amortisation has arisen and is an expense recognised on the statement of comprehensive income. The amortisation expense recognised, together with the large interest expense incurred that arose from the liability recognition, resulted in the profit after tax decreasing from R6 810 000 000 to (R4 199 042 000). This had a significant impact on the company's financial ratios with some company ratios becoming negative.

The company's asset utilisation ratio decreased from 17.22% to 8.63%. This is due to the significant increase in assets after the recognition of human capital as an asset and the company's gross profit that remained unaffected by this recognition. The total assets of the company increased by 99.61% after the recognition of human capital as an asset. The debt ratio increased from 26.62% to 66.95% due to the larger proportional increase of liabilities to assets. Total liabilities of the company increased by 402.08% to R90 344 651 000 after the recognition of human capital as an asset. As a result of this increase, the debt equity ratio increased from 36.27% to 202.56%.

The company's times interest earned ratio decreased from 18.39 times to (0.02) times indicating that the company would not be able to carry its finance costs if it were to recognise human capital as an asset. The ratio decreased due to the large interest expense that arose from the human capital recognition as well as the amortisation cost recognised. The interest

expense of the company increased by 833.68% after the recognition of the human capital asset and liability.

The earnings before interest and tax of Implats decreased from R9 748 000 000 to (R97 050 000). This is due to the increased amortisation expense of the company. Due to this decrease, the net operating profit margin decreased from 29.42% to (0.29%).

The return on total assets ratio of the company decreased from 10.07% to (4.08%) and the return on equity ratio decreased from 13.73% to (12.34%). This is due to the profit after tax decreasing by 38.34% from R6 810 000 000 to (R4 199 042 000) after the recognition of human capital as an asset.

Impact on risk and return

Recognising human capital as an asset had a significant impact on the company's financial ratios, the largest of which is highlighted under the company's profitability ratios. The net operating profit margin, return on total asset ratio as well as return on equity ratio decreased and these ratios all became negative. This is mainly as a result of the increased amortisation expense recognised as well as the increased interest expense recognised after the recognition of the human capital asset and liability. The company appears to be in a worse financial position after the capitalisation of human capital

Coal: Exxaro Resources Limited

Table 10: Exxaro ratio analysis
Source: Own research

	Original		**Adjusted**
	2010	**2011**	**2011**
	R'000	**R'000**	**R'000**
Financial figures			
Intangible assets	75 000	128 000	32 180 270
Other assets*	28 534 000	36 792 000	36 792 000
Total assets	28 609 000	36 920 000	68 972 270
Total liabilities	11 195 000	13 312 000	41 264 143
Total equity	17 414 000	23 608 000	27 708 527
Revenue	10 116 000	12 471 000	12 471 000
Gross profit	2 488 000	2 808 000	2 808 000
EBIT**	6 207 000	7 480 000	19 926 571
Interest expense	432 000	590 000	3 127 387
Profit before tax	5 891 000	7 049 000	16 799 184
Tax	732 000	986 000	3 760 571
Profit after tax***	5 159 000	6 063 000	13 038 613
Financial ratios			
Asset utilisation	8.70%	7.61%	4.07%
Debt ratio	39.13%	36.06%	59.83%
Debt: equity ratio	64.29%	56.39%	148.92%
Times interest earned	14.37 times	12.68 times	6.37 times
Net operating profit	61.36%	59.98%	159.78%
Return on total assets	18.03%	16.42%	18.90%
Return on equity	29.69%	25.68%	47.06%
Leverage ratio	1.65	1.56	2.49
Human capital asset ratio	14.59%	12.21%	-
Growth rate	5.5%	5.78%	-
Discount rate	21.69%	19.09%	-
Borrowing cost rate	9.9%	9%	-

***** **Total assets minus intangible assets**
****** **Earnings before interest and tax**
******* **Net profit from continuing activities**

General impact

Exxaro displays a human capital to total asset ratio of 14.49% in 2010 and 12.21% in 2011. This indicates a rather small investment in human capital compared to the company's total asset investment. The high employee cost of the company is due to the high amount of salaries and wages expensed by Exxaro. Over 60% of the company's economic value distributed is attributable to salaries and wages. In 2011, employees shared in the capital appreciation of the Exxaro share price and 9 694 employees each received a pre-tax contribution of over R135 000 in a R1 000 000 000 payout. This contribution further increased the human capital expense of the company.

For Exxaro, human capital recognised as an asset increased from R25 630 172 665 in 2010 to R32 052 269 873 in 2011. This resulted in an accretion income being recognised on the statement of comprehensive income and profit after tax increasing by 105.16% from R6 063 000 000 to R13 038 613 000. This increase, together with the increase in total assets and total liabilities, influenced the company's financial ratios.

After the recognition of human capital as an asset, the company's asset utilisation ratio decreased from 7.61% to 4.07%. This is due to the increase in assets of 86.82% to R68 972 270 000 after the recognition of the asset and the gross profit that remains unaffected. The debt ratio of the company increased from 36.06% to 59.83% due to the larger proportional increase of liabilities to assets. Total liabilities of the company increased by 209.98% from R13 312 000 000 to R41 264 143 000. As a result of this, the debt equity ratio increased from 56.39% to 148.92%.

The company's times interest earned ratio decreased from 12.68 times to 6.37 times. This ratio decreased due to the large interest expense that arose from the human capital recognition. The adjusted ratio indicates that although the company will be able to meet its interest expense obligation, the company will be under more pressure to meet this. Total interest for Exxaro increased by 430.07% after the human capital asset and liability recognition.

The earnings before interest and tax of the company increased by 166.40% from R7 480 000 000 to R19 926 571 000. This is mainly attributable to the large accretion

income recognised in 2011. Due to this, the net operating profit margin increased from 59.98% to 159.78%. The return on total assets ratio of the company increased from 16.42% to 18.90%. The return on total equity of the company increased from 25.68% to 47.06%. This is due to the profit after tax of Exxaro increasing by 115.05%, which is attributable to the large amortisation income recognised in 2011, offset slightly by the increased interest expense.

Impact on risk and return

The net operating profit margin, return on total asset ratio as well as return on equity ratio increased when human capital was recognised as an asset. This is mainly attributable to the asset accretion income recognised in 2011. The company seems to be in a better financial position after the recognition of human capital as an asset on the financial statements.

Electronic and electrical equipment: Allied Electronics Corporation Limited (Altron)

Table 11: Altron ratio analysis

Source: Own research

	Original		Adjusted
	2010	**2011**	**2011**
	R’000	**R’000**	**R’000**
Financial figures			
Intangible assets	2 754 000	2 274 000	53 786 044
Other assets*	9 773 000	10 145 000	10 145 000
Total assets	12 527 000	12 419 000	63 931 044
Total liabilities	6 173 000	6 105 000	51 786 022
Total equity	6 355 000	6 314 000	12 145 022
Revenue	22 336 000	22 810000	22 810 000
Gross profit	5 801 000	5 567 000	5 567 000
EBIT**	2 099 000	1 987 000	10 226 894
Interest expense	163 000	163 000	4 661 132
Profit before tax	1 136 000	1 298 000	5 565 762
Tax	437 000	457 000	1 504 693
Profit after tax***	699 000	841 000	4 061 069
Financial ratios			
Asset utilisation	46.31%	44.83%	8.71%
Debt ratio	49.28%	49.16%	81.00%
Debt: equity ratio	97.14%	96.69%	426.40%
Times interest earned	12.88 times	12.19 times	2.19 times
Net operating profit	36.18%	35.69%	44.84%
Return on total assets	5.58%	6.77%	6.35%
Return on equity	11%	13.32%	33.44%
Leverage ratio	1.97	1.97	5.27
Human capital asset ratio	28.87%	30.05%	-
Growth rate	5.78%	5.78%	-
Discount rate	10.97%	9.94%	-
Borrowing cost rate	9.9%	9%	-

* **Total assets minus intangible assets**

** **Earnings before interest and tax**

*** **Net profit from continuing activities**

General impact

Altron displays a human capital to total asset ratio of 28.87% in 2010 and 30.05% in 2011. This indicates a rather high investment in human capital in relation to the company's total assets. The human capital recognised as an asset of the company increased from R45 435 673 352 in 2010 to R51 512 043 519 in 2011. This resulted in an income being recognised on the statement of comprehensive income and the profit after tax of the company increasing by 382.89% from R841 000 000 to R4 061 069 000. The large human capital asset recognised is due to the large amount of salaries and wages being expensed by the company. The company's average salaries and wages per employee amounted to R288 527.04 per annum for 2011, indicating a high number of professional and skilled employees.

The company's asset utilisation ratio decreased from 44.83% to 8.71% after the recognition of human capital as an asset. This is due to the large increase in assets after the recognition of human capital as an asset and the gross profit of the company that remains unaffected. The total assets of the company increased by 414.78% from R12 419 000 000 to R63 931 044 000 after the recognition of human capital as an asset. The debt ratio of Altron increased from 49.16% to 81% due to the larger proportional increase of liabilities to assets. The total liabilities of the company increased from R6 105 000 000 to R51 786 022 000. The debt equity ratio increased significantly from 96.69% to 426.40% due to the 748.26% increase in liabilities after recognising human capital as an asset.

The company's interest earned ratio decreased from 12.19 times to 2.19 times. This ratio has decreased due to the large interest expense that arose from the human capital liability recognition. The total interest expense of the company increased from R163 000 000 to R4 661 132 000 after the recognition of the human capital asset and liability. The adjusted ratio indicates that it will be more difficult for the company to carry its interest expense obligation.

The earnings before interest and tax of the company increased by R8 239 894 000 from R1 987 000 000 to R10 226 894 000, representing a 414.69% increase. This is attributable to the large asset accretion income recognised in 2011. Because of this, the net operating profit margin of the company increased from 35.69% to 44.84%.

The profit after tax of the company increased by 382.89%. This is attributable to the asset accretion income recognised in 2011, which is slightly offset by the increased interest expense. The return on total assets ratio of the company decreased only slightly from 6.77% to 6.35%. This is due to the larger proportional increase in assets compared to the increase in profit after tax. The return on total equity of the company increased from 13.32% to 33.44% due to the 382.89% increase in profit after tax.

Impact on risk and return

The net operating margin and the return on equity ratios increased after the recognition of human capital as an asset. The return on asset ratio decreased only slightly, this is attributable to the larger proportional increase in assets compared to the increase in profit after tax. The company seems to be in a better financial position after the recognition of human capital as an asset on the financial statements.

Industrial engineering: Hudaco Industries Limited

Table 12: Hudaco ratio analysis

Source: Own research

	Original		**Adjusted**
	2010	**2011**	**2011**
	R’000	**R’000**	**R’000**
Financial figures			
Intangible assets	33 694	49 378	14 727 428
Other assets*	4 012 972	4 488 199	4 882 787
Total assets	4 046 666	4 537 577	19 610 215
Total liabilities	2 733 136	3 012 823	18 408 788
Total equity	1 313 530	1 524 754	1 201 427
Revenue	2 457 932	3 182 270	3 182 270
Gross profit	993 598	1 272 058	1 272 058
EBIT**	478 621	626 819	769 177
Interest expense	235 121	246 877	1 798 477
Profit before tax	260 503	384 497	(1 029 300)
Tax	23 436	46 653	(347 935)
Profit after tax***	237 067	337 844	(681 365)
Financial ratios			
Asset utilisation	24.55%	28.03%	6.49%
Debt ratio	67.54%	66.40%	93.87%
Debt: equity ratio	208.08%	197.59%	1532.24%
Times interest earned	2.04 times	2.54 times	0.43 times
Net operating profit	19.47%	19.70%	24.17%
Return on total assets	5.86%	7.45%	(3.47%)
Return on equity	18.05%	22.16%	(56.71%)
Leverage ratio	3.08	2.97	16.34
Human capital asset ratio	33%	32.68%	-
Growth rate	5.78%	5.78%	-
Discount rate	11.83%	13.80%	-
Borrowing cost rate	9.9%	9%	-

***** **Total assets minus intangible assets**
****** **Earnings before interest and tax**
******* **Net profit from continuing activities**

General impact

The human capital recognised as an asset of Hudaco decreased from R15 672 728 034 in 2010 to R14 678 049 845 in 2011. The decrease is attributable to the asset being calculated over a shorter period in 2011 (19 years) as opposed to 20 years in 2010 and no significant decreases in the company's human capital expenses profile. Due to the decrease in asset value from 2010 to 2011, an amortisation expense is recognised on the revised financials of the company. However, given that the amortisation expense recognised is smaller than the original human capital amount expensed on the company's financial statements, a temporary difference income is recognised on the revised financials.

The earnings before interest and tax of the company increased from R626 819 000 to R769 177 000, indicating a 22.70% increase after the recognition of human capital as an asset. However, after the large increase in interest expense is recognised in the revised financials of the company, the profit after tax of the company decreased by 301.68% from R337 844 000 to (R681 365 000). This had a significant impact on the company's financial ratios with some of the company's ratios becoming negative.

The company's asset utilisation ratio decreased from 28.03% to 6.49%. This is mainly attributable to the increase in assets after the recognition of human capital as an asset and the gross profit of the company that remains unaffected by this recognition. The total assets of the company increased by 332.17% from R4 537 577 000 to R19 610 215 000. The company's debt ratio increased from 66.40% to 93.87% due to the larger proportional increase of liabilities to assets. The total liabilities of the company increased by 511.01% from R3 012 823 000 to R18 408 788 000. The debt equity ratio increased significantly from 197.59% to 1532.24% due to the large increase in liabilities.

The company's times interest earned ratio decreased from 2.54 to 0.43 times, indicating that the company would not be able to carry its finance costs if it were to recognise human capital as an asset. Before the recognition of human capital as an asset, the company's interest expense was particularly high in comparison with the company's earnings before interest and tax. The ratio then further decreased due to the large interest expense that arose from the human capital recognition. The total interest expense of the company increased by 628.49% from R246 877 000 to R1 798 477 000.

The earnings before interest and tax of Hudaco increased slightly from R626 819 000 to R769 177 000. This is due to the temporary difference that arose due to the company's original human capital expense being higher than the amortisation and maintenance cost after recognising human capital as an asset. Because of this, the net operating profit margin of the company increased from 19.70% to 24.17%.

The return on total assets ratio of the company decreased from 7.45% to (3.47%) and the return on equity ratio decreased significantly from 22.16% to (56.71%). This is due to the profit after tax decreasing by 301.68% from R337 844 000 to (R681 365 000) which is attributable to the large interest expense recognised on the revised financial figures of the company.

Impact on risk and return

Recognising human capital as an asset had a significant impact on the company's financial ratios, the largest of which is highlighted under the company's liquidity ratios. Even though the net operating profit margin of the company increased slightly, the return on total asset ratio as well as return on equity ratio decreased and both these ratios became negative. This is due to the significant increase in interest expense, which is slightly offset by the asset accretion income recognised in the adjusted 2011 financial figures.

Beverages: Distell Group Limited

Table 13: Distell ratio analysis
Source: Own research

	Original		Adjusted
	2010	**2011**	**2011**
	R'000	**R'000**	**R'000**
Financial figures			
Intangible assets	205 680	221 331	9 526 025
Other assets*	7 995 351	8 262 249	8 262 249
Total assets	8 201 031	8 483 580	17 788 274
Total liabilities	2 962 730	2 789 571	11 734 316
Total equity	5 238 301	5 694 009	6 053 958
Revenue	11 808 884	12 327 786	12 327 786
Gross profit	3 834 228	4 035 915	4 035 915
EBIT**	1 426 822	1 479 721	3 292 400
Interest expense	83 899	60 595	935 583
Profit before tax	1 358 170	1 437 137	2 356 817
Tax	417 655	477 557	740 110
Profit after tax***	940 515	959 580	1 616 707
Financial ratios			
Asset utilisation	46.75%	47.57%	22.69%
Debt ratio	36.13%	32.88%	65.97%
Debt: equity ratio	56.56%	48.99%	193.83%
Times interest earned	17.01 times	24.42 times	3.52 times
Net operating profit	12.08%	12.00%	26.71%
Return on total assets	11.47%	11.31%	9.09%
Return on equity	17.95%	16.85%	26.70%
Leverage ratio	1.56	1.49	2.94
Human capital asset ratio	13.52%	14.01%	-
Growth rate	5.78%	5.78%	-
Discount rate	17.40%	17.44%	-
Borrowing cost rate	9.9%	9%	-

* **Total assets minus intangible assets**
** **Earnings before interest and tax**
*** **Net profit from continuing activities**

General impact

Distell displays a human capital asset ratio of 13.52% in 2010 and 14.01% in 2011. This indicates a rather small investment in human capital in comparison to the company's total asset value. The company's human capital asset value increased from R8 838 266 446 in 2010 to R9 304 694 144 in 2011. This resulted in an income being recognised on the statement of comprehensive income and the profit after tax of the company increasing by 68.48% from R959 580 000 to R1 616 707 000. The company employed 4 689 people at 2011 and the average salaries and wages per employee amounted to R214 589.04 per annum for this period.

After the recognition of human capital as an asset, the company's asset utilisation ratio decreased from 47.57% to 22.69%. This is due to the increase in assets after the recognition of human capital as an asset and the gross profit of Distell that remains unaffected. The company's total assets increased from R8 483 580 000 to R17 788 274 000, indicating a 109.68% increase. The debt ratio of the company increased from 32.88% to 65.97% due to the larger proportional increase of liabilities to assets. The company's total liabilities increased by 320.65% from R2 789 571 000 to R11 734 316 000. Subsequently, the debt equity ratio of the company also increased significantly from 48.99% to 193.83%.

The company's interest earned ratio decreased from 24.42 times to 3.52 times. This ratio has decreased due to the large interest expense that arose from the human capital liability recognition. The total interest expense of the company increased from R60 595 000 to R935 583 000. The adjusted ratio indicates that although the company will be able to meet its interest expense, it will have a difficult time doing so.

The earnings before interest and tax of the company increased by 122.50% from R1 479 721 000 to R3 292 400 000. This is attributable to the large asset accretion income recognised in 2011. Due to this, the net operating profit margin of the company increased from 12% to 26.71%.

The return on total assets ratio of the company decreased only slightly from 11.31% to 9.09%. This is due to the larger proportional increase in assets compared to the increase in profit after tax. The return on total equity of the company increased from 16.85% to 26.70%.

This is due to the large amortisation income recognised in 2011 offset slightly by the increased interest expense, which increased profit after tax by 68.48%.

Impact on risk and return

The net operating margin and the return on equity ratios increased after the recognition of human capital as an asset. The return on asset ratio decreased only slightly, this is attributable to the larger proportional increase in assets compared to the increase in profit after tax. The company seems to be in a better financial position after the recognition of human capital as an asset on the financial statements.

Pharmaceuticals and biotechnology: Adcock Ingram Holdings Limited

Table 14: Adcock Ingram ratio analysis
Source: Own research

	Original		**Adjusted**
	2010	**2011**	**2011**
	R'000	**R'000**	**R'000**
Financial figures			
Intangible assets	424 149	728 474	11 199 182
Other assets*	4 333 196	4 506 986	4 730 838
Total assets	4 757 345	5 235 460	15 930 020
Total liabilities	1 684 005	2 012 080	12 635 123
Total equity	3 073 340	3 223 380	3 294 897
Revenue	4 200 022	4 534 235	4 534 235
Gross profit	2 201 131	2 168 961	2 168 961
EBIT**	909 954	1 085 528	1 070 682
Interest expense	37 931	30 225	814 851
Profit before tax	931 311	1 119 081	255 831
Tax	308542	326 129	102 277
Profit after tax***	622 769	792 952	153 554
Financial ratios			
Asset utilisation	46.27%	41.43%	13.62%
Debt ratio	35.40%	38.43%	79.32%
Debt: equity ratio	54.79%	62.42%	383.48%
Times interest earned	23.99 times	35.91 times	1.31 times
Net operating profit	21.67%	23.94%	23.61%
Return on total assets	13.09%	15.15%	0.96%
Return on equity	20.26%	24.60%	4.66%
Leverage ratio	1.55	1.62	4.85
Human capital asset ratio	21.21%	13.76%	-
Growth rate	5.78%	5.75%	-
Discount rate	8.25%	8.75%	-
Borrowing cost rate	7.21%	4.95%	-

* **Total assets minus intangible assets**
** **Earnings before interest and tax**
*** **Net profit from continuing activities**

General impact

The financial ratios of the company indicate a human capital asset ratio of 21.21% in 2010 and 13.76% in 2011. This indicates a much lower investment in human capital assets in comparison to the company's total asset value.

The company's total human capital recognised as an asset decreased from R10 882 471 201 in 2010 to R10 470 707 789 in 2011. This is a result of staff termination as well as director's remuneration, performance bonuses and share based payments decreasing from 2010 to 2011. However, to preserve consistency in the study, the human capital asset value for Adcock was calculated at the beginning of 2011 instead of at 2010 to factor in the effect of the company's staff termination. An amount of R5 097 406 461 was calculated as the value of the terminated staff in 2010.

The decrease in asset value resulted in amortisation arising and an expense being recognised on the statement of comprehensive income. The amortisation together with the interest expense incurred that arose from the liability recognition resulting in the profit after tax decreasing by 80.64% from R792 952 000 to R153 554 000.

The asset utilisation ratio of Adcock decreased from 41.43% to 13.62%. This is due to the increase in assets after the recognition of human capital as an asset and the gross profit of the company that remains unaffected by the recognition. The total assets of the company increased by 204.27% from R5 235 460 000 to R15 930 020 000 after the recognition of human capital as an asset. The debt ratio of the company increased from 38.43% to 79.32% due to the increase in both assets and liabilities. The debt equity ratio increased significantly from 62.42% to 383.48% due to the increase in liabilities after recognising human capital as an asset. The company's total liabilities increased by 527.96% from R2 012 080 000 to R12 635 123 000.

The company's times interest earned ratio decreased from 35.91 times to 1.31 times indicating that the company would struggle to carry its finance costs and other operating expenses if it were to recognise human capital as an asset. The ratio decreased due to the large interest expense that arose from the human capital liability recognition. The total interest expense of the company increased from R30 225 000 to R814 851 000.

The net operating profit margin of the company decreased slightly from 23.94% to 23.61% due to the earnings before interest and tax of the company decreasing by 1.37% from R1 085 528 000 to R1 070 682 000. The earnings before interest and tax decreased because of the amortisation expense recognised in the 2011 adjusted figures.

The return on total assets ratio decreased from 15.15% to 0.96%. This is due to the profit after tax of the company decreasing by 80.64% from R792 952 000 to R153 554 000, due to the amortisation expense and increased interest expense after the recognition of the human capital asset and liability. For this reason, return on equity of the company decreased from 15.85% to 2.84%.

Impact on risk and return

The net operating profit margin of the company decreased from 23.94% to 23.61% due to the decrease in earnings before interest and tax. Both the return on assets as well as the return on equity ratios decreased due to the decrease in the profit after tax of the company. The company appears to be in a worse position after the recognition of human capital as an asset.

Food and drug retailers: Pick n Pay Holdings Limited

Table 15: Pick n Pay Holdings ratio analysis
Source: Own research

	Original		Adjusted
	2010	**2011**	**2011**
	R'000	**R'000**	**R'000**
Financial figures			
Intangible assets	1 126 700	404 500	45 806 712
Other assets*	10 072 100	10 695 800	10 695 800
Total assets	11 198 800	11 100 300	56 502 512
Total liabilities	9 054 200	8 941 500	46 354 364
Total equity	2 144 600	2 158 800	10 148 148
Revenue	49 323 800	51 945 800	51 945 800
Gross profit	8 823 600	9 086 200	9 086 200
EBIT**	1 829 600	1 427 600	16 630 219
Interest expense	86 300	111 000	3 549 492
Profit before tax	1 812 000	1 356 100	13 080 727
Tax	531 900	447 800	3 741 756
Profit after tax***	1 280 100	908 300	9 338 971
Financial ratios			
Asset utilisation	78.79%	81.86%	16.08%
Debt ratio	80.85%	80.55%	82.04%
Debt: equity ratio	422.19%	414.19%	456.78%
Times interest earned	21.20 times	12.86 times	4.69 times
Net operating profit	3.71%	2.75%	32.01%
Return on total assets	11.43%	8.18%	16.53%
Return on equity	59.69%	42.07%	92.03%
Leverage ratio	5.22	5.14	5.57
Human capital asset ratio	36.39%	38.67%	-
Growth rate	5.78%	5.78%	-
Discount rate	16.34%	12.86%	-
Borrowing cost rate	9.9%	9%	-

* **Total assets minus intangible assets**
** **Earnings before interest and tax**
*** **Net profit from continuing activities**

General impact

Pick n Pay's human capital asset increased significantly between 2010 and 2011. In 2010 the human capital asset amounted to R34 732 242 064 and in 2011 it amounted to R45 402 218 897. This is mainly due to increased director's remuneration in 2011 as well as increased share based payments and the increase in salaries and wages. The lower discount rate used in 2011 also had an impact on the human capital asset value in 2011. A discount rate of 12.86% was calculated for 2011 as opposed to the 16.34% calculated for 2010.

The company displays a human capital to total asset ratio of 36.39% in 2010 and 38.67% in 2011. This indicates a significant investment in human capital in comparison to the company's total asset value. The high employee cost is due to the high amount of salaries and wages expensed by the company. Pick n Pay employed 49 200 people as of 2011. The average cost per employee was R75 290.65 per annum at 2011. This indicates a high number of unskilled or semi-skilled employees.

Because of the increase in human capital asset value, an accretion income is recognised on the revised statement of comprehensive income. The profit after tax of the company increased significantly by 928.18% from R908 300 000 to R9 338 971 000. This, together with the increase in total assets and total liabilities, affected the company's financial ratios significantly.

The company's asset utilisation ratio decreased from 81.86% to 16.08% This is attributable to the increase in assets after the recognition of human capital as an asset and the gross profit that remains unaffected. The total assets of the company increased by 409.02% from R11 100 300 000 to R56 502 512 000. The debt ratio of the company increased from 80.55% to 82.04% due to the larger proportional increase of liabilities to assets. The company's total liabilities increased by 418.42% from R8 941 500 000 to R46 354 364 000. The debt equity ratio increased from 414.19% to 456.78% due to the increase in liabilities.

Pick n Pay's times interest earned ratio decreased from 12.86 times to 4.69 times. This ratio decreased due to the large interest expense that arose from the human capital recognition. The total interest expense of the company increased from R111 000 000 to R3 549 492 000.

The earnings before interest and tax of the company increased significantly from R1 427 600 000 to R16 630 219 000. This is mainly attributable to the large accretion income recognised in 2011. Because of this, the net operating profit margin increased from 2.75% to 32.01%. The return on total assets ratio of the company increased from 8.18% to 16.53%. The return on total equity of the company increased from 42.07% to 92.03%. This is due to the large amortisation income recognised in 2011 offset slightly by the increased interest expense, which increased the profit after tax by 928.18%.

Impact on risk and return

The net operating profit margin, return on total asset ratio as well as return on equity ratio increased when human capital was recognised as an asset. This is mainly attributable to the asset accretion income recognised in 2011. The company appears to be in a better financial position after the recognition of human capital as an asset on the financial statements.

Software and computer services: EOH Holdings Limited

Table 16: EOH ratio analysis
Source: Own research

	Original		Adjusted
	2010	**2011**	**2011**
	R'000	**R'000**	**R'000**
Financial figures			
Intangible assets	324 142	550 355	4 908 690
Other assets*	780 990	1 087 691	1 087 691
Total assets	1 105 132	1 638 046	5 996 381
Total liabilities	641 199	926 989	4 843 989
Total equity	463 933	711 057	1 152 392
Revenue	1 692 421	2 428 973	2 428 973
Gross profit	607 112	900 581	900 581
EBIT**	147 899	232 879	1 446 355
Interest expense	6 353	7 646	207 114
Profit before tax	149 759	234 390	1 239 241
Tax	51 980	85 986	369 908
Profit after tax***	97 779	148 404	869 333
Financial ratios			
Asset utilisation	54.94%	54.98%	15.02%
Debt ratio	58.02%	56.59%	80.78%
Debt: equity ratio	138.21%	130.37%	420.34%
Times interest earned	23.28 times	30.46 times	6.98 times
Net operating profit	24.36%	25.86%	59.55%
Return on total assets	8.85%	9.06%	14.50%
Return on equity	21.08%	20.87%	75.44%
Leverage ratio	2.38	2.30	5.20
Human capital asset ratio	32.43%	27.66%	-
Growth rate	5.78%	5.78%	-
Discount rate	13.38%	14.22%	-
Borrowing cost rate	5.33%	2.40%	-

* **Total assets minus intangible assets**
** **Earnings before interest and tax**
*** **Net profit from continuing activities**

General impact

The human capital asset ratio of EOH increased from R3 742 366 830 to R4 358 335 348 between 2010 and 2011. This is mainly attributable to the 25.46% company increase in salaries and wages between 2010 and 2011 as a result of the company growth. Director's remuneration further increased by 71.71% between 2010 and 2011. The company displays a human capital asset ratio of 32.43% for 2010 and 27.66% for 2011. This indicates a rather significant investment in human capital as a percentage of total assets. EOH employed approximately 3 200 people at 2011 and the average salaries and wages per employee was R125 581.56 per annum as at 2011.

Because of the increase in human capital asset value, an accretion income is recognised on the revised statement of comprehensive income. The profit after tax of the company increased by 485.79% from R148 404 000 to R869 333 000 after the recognition of human capital as an asset.

The company's asset utilisation ratio decreased from 54.98% to 15.02%. This is a result of the large increase in assets after the recognition of human capital as an asset and the gross profit that remains unaffected. The company's total assets increased by 266.07% from R1 638 046 000 to R5 996 381 000. The debt ratio of the company increased from 56.59% to 80.78% due to the larger proportional increase of liabilities to assets. The debt equity ratio increased from 130.37% to 420.34% due to the increase in liabilities. The total liabilities of the company increased by 422.55% from R926 989 000 to R4 843 989 000.

The company's times interest earned ratio decreased from 30.46 times to 6.98 times. This ratio decreased due to the large interest expense that arose from the human capital recognition. The total interest expense of the company increased from R7 646 000 to R207 114 000.

The earnings before interest and tax of the company increased by 521.08% from R232 879 000 to R1 446 355 000. This is attributable to the large accretion income recognised in 2011. Because of the increase in earnings before interest and tax, the net operating profit margin increased from 25.86% to 59.55%. The return on total assets ratio of the company increased from 9.06% to 14.50%. The return on total equity of the company

increased from 20.87% to 75.44%. This is due to the large amortisation income recognised in 2011, offset slightly by the increased interest expense which increased the profit after tax of the company by 485.79% from R148 404 000 to R869 333 000.

Impact on risk and return

The net operating profit margin, return on total asset ratio as well as return on equity ratio increased when human capital was recognised as an asset. This is mainly attributable to the asset accretion income recognised in 2011, which is slightly offset by the increased interest expense. The company appears to be in a better financial position after the recognition of human capital as an asset.

4.5 THE IMPACT ON DECISION MAKING

In this chapter, the groups of ratios that were calculated are asset management, debt management and profitability ratios. The cash flow of the company should not be affected by the change in the company's financial figures and this is not taken into account when the impact on decision making is discussed. The original and adjusted ratios were compared and significant differences noted. All ten of the companies analysed in this study showed significant fluctuations in the key ratios. The main objective of the study was to examine the impact that the recognition of human capital as an asset will have on the financial ratios of a company and how this will affect the decision making of stakeholders.

In this section, the impact on decision making will be discussed for the three groups of ratios calculated in the tables in section 4.4. The figures and elements influencing each ratio will be highlighted.

4.5.1 Asset management ratios

Asset utilisation

The asset utilisation ratio indicates the investment in assets required to earn gross profit and is of particular interest when recognising human capital as an asset on the financial statements.

All of the companies analysed in this study portrayed a decrease in the asset utilisation ratio. This is due to the significant increase in the total assets of the company after the recognition of human capital as an asset and the gross profit of the company that remains unaffected by this recognition. It is of importance to note, in this ratio specifically, the association between the human capital asset ratio calculated for each company and the degree to which the asset utilisation ratio decreased in a specific company.

In the companies that portrayed a higher human capital asset ratio (indicating that the human capital recognised as an asset is a significant percentage of the company's current assets); the decrease in the asset utilisation ratio of the company was much more significant. This is because the companies had a smaller asset base in relation to the human capital asset and the

recognition of the human capital asset increased the company's asset base by a much larger percentage than companies that had a larger asset base in relation to the human capital asset.

This will affect the decision making of stakeholders because a much larger asset base is now employed for each company to generate a smaller margin of gross profit. However, if the recognition of human capital as an asset rather than as an expense were to be the norm for all companies, the asset utilisation base margin would become smaller and stakeholders would compare companies on this lower base.

4.5.2 Debt management ratios

Debt ratio

The debt ratio of a company represents the total debt of a company compared to its total assets. The higher the debt ratio, the higher the financial risk of the company.

In all of the companies analysed, the debt ratios increased after the recognition of human capital as an asset. This is attributable to the recognition of both an asset and a liability when human capital is classified as an asset rather than as an expense. The proportional increase in liabilities for all the companies in the study is much larger than the proportional increase in assets after the recognition of human capital as an asset.

On average, the assets of the companies analysed increased between 58.62% and 414.78%, whereas the liabilities of the companies analysed increased between 204.84% and 748.26%. This resulted in the debt ratios of the companies examined increasing on average from between 26.62% and 80.55% to between 59.83% and 93.87%. Companies that had a higher initial debt ratio portrayed a smaller increase in the adjusted debt ratios than companies that had a smaller initial debt ratio.

The higher debt ratio of a company would have an impact on the decision making of stakeholders. The higher the debt ratio of a company, the more leveraged the company and the greater its financial risk. Debt ratios vary across industries, with capital-intensive businesses generally having higher debt ratios than people intensive industries such as technology and accounting firms. If however, human capital were to be recognised as an

asset in the financial statements across all companies in a certain industry, the debt ratio norm would be much higher. Investors and other stakeholders consider this when analysing a company.

Debt to equity ratio

The debt to equity ratio represents the amount of debt covered by shareholders funds. It measures the total debt of a company in relation to the total equity. A higher debt equity ratio indicates that a company has been more aggressive in financing its growth with debt.

All of the companies analysed displayed an increase in the debt equity ratio. The ratios increased on average from between 36.27% and 414.19% to between 148.92% and 1532.24% for the ten companies analysed. Two factors had an impact on these increased ratios. The first is the fact that all of the companies analysed displayed a significant increase in liabilities after the recognition of the human capital asset and liability.

The second impacting factor is due to some of the companies analysed portraying an increase in equity due to increased net profits, where other companies portray a decrease in equity due to a decline in net profits after the recognition of human capital as an asset. The increase and decrease in net profits of each company is explained in more detail in section 4.4. Nevertheless, the companies that displayed an increase in net profits still presented an increase in debt equity ratios due to the larger proportional increase in liabilities as opposed to increase in equity.

One would assume that with the increased debt, due to the human capital asset and liability recognition, the company could potentially generate more earnings. However, potential increased earnings as a result of the advantages of human capital asset recognition have not been factored into this study. In some of the companies analysed, the cost of the increased interest expense, together with the increased amortisation written off on intangible assets outweighs the return that the company will generate on the debt and it will lead to potential bankruptcy.

The increased debt equity ratio will influence the decision making of company stakeholders. However, as the other ratios depicted, once human capital is recognised as an asset on all

companies' financial statements, the base for the debt to equity ratio will be much higher. Stakeholders will take this into account when analysing and comparing company performance.

Times interest earned

The times interest earned ratio measures the degree to which earnings can decrease before causing financial losses to the company. Failure to meet the interest commitment of a company could lead to insolvency.

For the purpose of this study, the interest obligation in terms of the human capital asset and liability recognition was calculated by using the average interest rate that each company is subject to. This was calculated by dividing the total interest expense by the interest bearing liabilities (current and non-current). As explained in Chapter 3, this rate may be misleading at times. The interest bearing liabilities of a company at year end will never be a true reflection of the company's liabilities. Due to this, the lowest of the company borrowing rate and the South African prime interest rate for each of the 2010 (9.9%) and 2011 (9%) years was used.

In all the companies analysed the times interest earned ratio decreased significantly. This is due to two factors. Firstly, all the companies in this study displayed a significant increase in interest expense. Interest expense for the companies increased from between R7 646 000 and R590 000 000 to between R207 144 000 and R4 948 521 000.

The second factor is that some of the companies analysed portrayed an increase in earnings before interest and tax, where other companies portrayed a decrease in earnings before interest and tax after the recognition of human capital as an asset. Some of the companies that displayed a decrease in earnings had negative values for earnings before interest and tax. This resulted in the times interest earned ratio becoming negative. The increase and decrease in earnings of each company is explained in more detail in section 4.4. Nevertheless, the companies that displayed an increase in earnings before interest and tax still presented an increase in debt equity ratios due to the larger proportional increase in liabilities than in earnings.

The times interest earned ratio for the companies examined decreased from between 2.54 times and 35.91 times to between (0.02) times and 6.98 times. This decrease indicates that all companies will have a more difficult time meeting their interest obligations after the recognition of human capital as an asset with some of the companies not being able to meet the interest obligation at all, causing financial losses to the company.

This will have an impact on the decision making of stakeholders as all companies now have an additional interest burden to carry. However, the interest recognised in this study is not an actual cash flow interest. Interest on employees will not have to be paid to a financial institution such as a bank.

4.5.3 Profitability ratios

The profitability ratios reflect the collective effect of liquidity, asset management and debt management on operating outcomes. The three ratios analysed in this study include the net operating profit margin, return on total assets and return on total equity. These ratios assess a company's ability to generate earnings as compared to its expenses incurred during a specific period of time. In companies analysed for this study, five of the companies showed increased profitability ratios after human capital asset recognition. Three of the companies were in a worse position after the recognition and two of the companies had mixed results. The two companies with mixed results both displayed an increase in their net operating profit margins, but a decrease in their return on total assets and return on total equity ratios. This is attributable to the increased earnings before interest and tax of the company, but a decrease in net operating profit after the recognition of the increased interest expense.

Net operating profit margin

The net operating profit margin measures the earnings before interest and tax of a company in relation to its total revenue and is used to measure the company's operating efficiency. For a company to be able to carry costs such as interest and debt, a healthy operating margin needs to be retained.

In the study, it was found that seven of the ten companies showed increased margins after the recognition of human capital as an asset. This is due to the companies' human capital asset

value being higher in 2011 than in 2010 and an asset accretion income being recognised. The reason for the growth in human capital asset value for each company is explained in detail in section 4.4.

Three of the companies analysed displayed a decrease in their net operating profit margin. This is due to the human capital asset value being lower in 2011 than in 2010 and an amortisation expense being recognised on the revised financial statements of those companies. The reason for the lower asset value in 2011 for each company is covered in section 4.4.

The net operating margin gives a stakeholder an idea of how much a company makes on each Rand of the company's sales. The higher the operating margin, the better a company's cost control is. When comparing the operating margin of companies it is important to look at companies within the same industry. Asset intensive companies may have smaller operating costs and cost of sales expenses, but many assets that are being financed by debt. This will lead to a higher interest expense for the company and a lower net profit margin. A non-asset intensive company may portray a smaller net operating margin but with lower interest expense. For this reason, it is important to track a company's net profit margin over a period.

Return on total assets

This ratio measures the profitability of the firm in relation to its total assets. This is also referred to as the return on investment ratio and measures a company's profit after tax over its total assets. The return on total asset ratio gives the stakeholders an idea of how efficient management uses assets to generate earnings. This ratio will vary substantially between companies in different industries and it is important to compare this ratio against other companies in a similar industry or to track a company's return on assets ratio over a period.

In this study, five of the companies displayed an increase in the return on total assets ratio and the other five companies displayed a decrease in this ratio. Two factors had an impact on this result. Firstly, all the companies analysed showed an increase in total assets. On average, the total assets of the companies analysed increased between 58.62% and 414.78% after the recognition of human capital as an asset. The second factor was the increase or decrease in profit after tax of the companies. Five of the companies displayed an increase in

profit after tax. This is due to the large asset accretion being recognised on the company's revised financial figures that was slightly offset by the increased interest expense. On average, the net profit of these five companies increased by between 68.48% and 928.18%. The return on total asset ratios of these companies all increased due to the larger proportional increase in net profit over assets.

The other five companies analysed displayed a decrease in the return on total assets ratio. For three of these five companies the human capital asset value recognised was lower in 2011 than in 2010 and a large amortisation expense arose. This, together with the increased interest expense decreased the net profit after tax of the companies significantly, with one of these three companies' return on total assets ratios becoming negative. For the other two companies that displayed a decrease in the return on total assets ratio, the human capital value recognised was higher in 2011 than in 2010 and an asset accretion income was recognised. This increased these two companies' earnings before interest and tax. However, the asset accretion income recognised was small and after the increase in interest expense was recognised for these two companies, the profit after tax decreased and both companies' profit after tax became negative. On average, the five companies that displayed a decrease in profit after tax depicted a decrease of between 38.34% and 301.68%. The decrease in net profit for these companies together with the increased total asset value led to a decrease in return on total assets.

The higher the return on total assets, the more efficiently management is utilising their asset base. From the ten companies analysed it has become clear that this ratio relies heavily on two aspects; the increase or decrease in human capital value year on year and the increased interest expense across all ten companies. For a more reliable ratio, it would be meaningful to calculate earnings before interest and tax over total assets rather than the net profit after tax of the company.

Return on equity

The return on equity ratio measures the total profitability in relation to total shareholders' funds by revealing how much profit a company generates with shareholders' funds.

In this study, five of the companies analysed displayed an increase in the return on equity ratio and the other five companies displayed a decrease in this ratio, with two of these companies' ratios becoming negative. The major factor that affected this ratio was the increase or decrease in profit after tax of the companies analysed. Five of the companies displayed an increase in profit after tax and the other five companies displayed a decrease in their profit after tax figures. The detail on the increases and decreases is provided in the return on asset section above.

The higher the return on equity ratio, the more effective management is in utilising its equity base. As with the return on assets ratio, this ratio relies heavily on two aspects, the increase or decrease in human capital value year on year and the increased interest expense across all ten companies. For a more reliable ratio, it would be meaningful to calculate earnings before interest and tax over total assets rather than the net profit after tax of the company.

4.5.4 Summary

The factors that influenced each of the financial ratio categories are explained in this section. This impact on the decision making of stakeholders is also explained. The analysis of the companies included in this study showed mixed results. The financial position of some companies appeared to improve as a result of capitalising human capital while in other companies it had adverse results. It has to be noted that with the initial introduction of human capital as an asset, unexpected results may occur. Whether human capital is shown as an asset or written off as an expense, the total net charge to the comprehensive income statement will, over the useful life of an employee remain the same, although not in the same accounting periods. Any shocks resulting from initial application of capitalising human capital will smooth out over time.

4.6 CONCLUSION

In this chapter, the financial ratios were calculated by using the companies' original financial statements. Important ratios and financial figures were displayed. The adjusted figures and financial ratios were shown in the tables alongside the original figures and ratios and a discussion about the changes in financial ratios followed each table.

It is important to note that the company's selected for this study all performed the same on the debt and asset management ratios after the recognition of human capital as an asset. However, in terms of profitability ratios, the companies had varying results. Each of the companies were then identified as either being in a better liquidity position or a worse off position after the recognition of human capital as an asset. In terms of the profitability ratios, five of the companies that were analysed were in a better position after the recognition of human capital as an asset, three of the companies were worse off after the recognition and the other two companies had mixed results. The most significant factor affecting the results of each company is the recognition of either an amortisation expense or asset accretion income on each company, offset or increased by the increased interest expense of each company. The amortisation expense or asset accretion income is a result of the difference in the company's human capital asset value between 2010 and 2011 recognised on the company's adjusted financial figures.

The five companies that recognised an accretion income, which was not offset by the increased interest expense, appear to be in a better financial position after the recognition of human capital as an asset. The three companies that recognised an amortisation expense on the adjusted 2011 financial figures, which was further impacted by the increased interest expense, were all worse off after the recognition of human capital as an asset. The two companies that portrayed mixed results were companies that recognised a very small asset accretion income in the adjusted 2011 figures. For both these companies, the net operating profit margins increased due to the increased earnings before interest and tax of the company. However, both companies' profit after tax decreased due to the significant increase in the company's interest expense. This resulted in the company's return on total assets and return on total equity decreasing.

The impact on decision making for each main financial ratio category was also discussed in this chapter.

CHAPTER FIVE

CONCLUSIONS, LIMITATIONS AND RECOMMENDATIONS

5.1 INTRODUCTION

The focus of Chapter 4 was on decision making by using financial ratio analysis. Relevant ratios were calculated for both the original financial statements and the adjusted financial statements, after the recognition of human capital as an asset, of the ten companies selected for this study. The new financial ratios were then compared to the original financial analysis of each company and differences were discussed.

In this chapter, the key findings of the study will be summarised, the scope and limitations of the study will be explained and lastly recommendations will be made for future research in the field of human capital.

5.2 KEY FINDINGS

This section will highlight the key findings of the research study and provide a summary of each key finding.

5.2.1 Current human capital disclosures

Throughout Chapter 3, it became evident that there are some general inadvertencies and inconsistencies regarding the human capital and employee costs recognition on companies' financial statements. The way in which human capital is reported varies from company to company. Refer to Appendix 3 for a full breakdown of each company's human capital disclosures. General shortcomings on human capital reporting include:

- a few of the companies provided no information on company recruitment costs or other costs to acquire employees, such as signing on bonuses. An assumption was made that these costs are included in the *general costs* of the company, but because this was not independently identifiable, it was not included in the companies' human capital calculation;

- termination costs and any termination benefits were not included in some of the companies' financial statements. As with recruitment costs, an assumption was made that these costs are included in the *general costs* of the company and could not be included in the human capital calculation of those companies;
- one of the companies in the study mentions medical and other contributions in the notes to the financial statements, but no mention is made of actual amounts. An assumption was made that these amounts are included in the salaries and wages line of the employee costs on a cost to company basis;
- one of the companies analysed did not include the total remuneration of the directors in the remuneration report and many calculations had to be done to calculate the total. Although care has been taken to calculate this amount, this calculation may still be subject to error;
- most of the companies analysed did not include development costs or costs in terms of the skills and experience of employees. This will generally include costs such as training and professional skills development. An assumption is made that these costs are included in the *general expenses* of the company, but could not be included as human capital, as this is not broken down into specific elements; and
- for one of the companies analysed, the total of the company contributions is included under *other contributions* on the human capital table. These contributions include medical aid, pension and other company contributions and no breakdown was provided under these elements. However, this will not have an impact on the human capital disclosure, as all company contributions are included in the human capital calculation.

5.2.2 Significant human capital recognised

A large increase in assets and liabilities was noted in both 2010 and 2011 when human capital was recognised as an asset. This was not expected at the beginning of the study. Assets for the companies analysed increased on average between 58.62% and 414.78% and liabilities increased between 204.84% and 748.26%. The reasons for the large increase in assets and liabilities for each company are explained in detail in section 4.4.

5.2.3 The impact on decision making

The recognition of human capital as an asset had a significant impact on the financial ratios of the companies analysed. This is directly linked to the decision making of company stakeholders. The impact on each of the groups of financial ratios calculated and the impact on stakeholder decision making is covered in detail in Chapter 4, section 4.5.

From the information presented in Chapter 4, it became evident that half of the companies analysed portrayed better results after the recognition of human capital as an asset. Three of the companies analysed displayed poorer results and the other two presented mixed results. The main reason for this was explained at the end of Chapter 4. It is important to note that the ten companies analysed in the study all performed the same in terms of the debt and asset management ratios, but had varying results in terms of the profitability ratios.

5.2.4 Summary

The key findings of the study are summarised in this section. The key findings are:

- the issues faced with the current human capital disclosures of companies;
- the large amounts of human capital recognised as an asset; and
- the impact that the recognition has on stakeholder decision making.

5.3 CHAPTER SUMMARY

Chapter 1 of this study provides the reader with background to the study as well as the focus of the study. The first chapter also provides the main and secondary objectives of the study and describes the research methodology.

In Chapter 2, the objective is to obtain a thorough understanding of assets and the recognition thereof. The advantages of comprehensive human capital reporting are considered. The characteristics of human capital being both an expense and an asset are then analysed. The recognition criteria and measurement methods of intangible assets are also considered.

The focus of Chapter 3 is to determine how the ten companies selected for this study disclose human capital on their financial statements. A checklist was generated to identify the human capital costs that companies should disclose on their financial statements. Each company's financial statements that were examined and all human capital costs that were identified are disclosed in Appendix 3. After these costs were identified, the total human capital costs for each company were calculated, measured and disclosed as an intangible asset on the adjusted financial figures of the company. These figures are provided in Chapter 4. The method for measuring and disclosing the human capital costs identified is described in section 3.5.

In Chapter 4, a closer look is taken at decision making, by making use of financial ratio analysis. The ratios calculated in this study are grouped as follows:

- asset management ratios;
- debt management ratios;
- profitability ratios.

The abovementioned ratios were calculated from the original financial statements of the ten companies selected for this study. The financial ratios were then recalculated by recognising and disclosing human capital as an asset, as calculated and set out in Chapter 3. The new financial ratios were then compared with the originals and their impact on decision making examined.

Chapter 5 provides the key findings of the research, states the limitations and challenges of the study and provides recommendations for future research.

5.4 RECOMMENDATION ON HUMAN CAPITAL DISCLOSURE

Considering the importance of human capital as a resource for a business, and evidenced by the research conducted in this study, it is recommended that the impact of human capital recognised as an asset, be disclosed in the financial statements. It became evident from the research results in Chapter 4 that the treatment of human capital as an asset could have drastic effects on the reported earnings of companies. It is therefore expected that changing the accounting treatment of human capital will be met with resistance. A more feasible

alternative that is recommended is to include a note in the financial statements indicating the effect had human capital been recognised as an asset together with the related liability.

A note containing the following information should be included in the financial statements of companies:

Impact on financial statements when recognising human capital as an asset:

Total number of employees considered as assets of the company	xx
Average remaining working lives of employees	xx years
Net profit after tax	Rxxx
Total assets	Rxxx
Total liabilities	Rxxx
Earnings per share	xxx cents

5.5 SCOPE AND LIMITATIONS OF THE STUDY

As with any research study, there are certain limitations. The following limitations of the study are noted:

- the issues faced with the current human capital disclosures of companies as explained in section 5.2.1;
- the companies selected for the study are limited to ten;
- the impact on high employee driven companies such as accounting or law firms was not examined;
- the number of employees for each company analysed differs; and
- inadequate disclosures by some companies necessitated that certain assumptions needed to be made when performing the calculations in Chapter 3.

5.6 RECOMMENDATIONS FOR FUTURE RESEARCH

In terms of future research, the following could be considered:

- research into employee intensive companies such as accounting or law firms;

- the impact of recognising a single employee such as the CEO or CFO, or group of employees, such as certain key employees as an asset of the company;
- disclosure regarding human capital in financial statements; and
- other factors that need to be considered in placing a value on human capital as an asset.

5.7 CONCLUSION

In Chapter 1, the main and secondary objectives of the study were explained. The main objective of the study is to examine the impact that the recognition of human capital as an asset will have on the essential financial ratios of a company and how this will affect the decision making of stakeholders. This objective was achieved in Chapter 4. In Chapter 4, the groups of financial ratios that were calculated are asset management, debt management and profitability ratios. The original and adjusted ratios of each company analysed were compared and significant differences noted for each company. All ten of the companies analysed in this study showed significant fluctuations in the key ratios. In section 4.5, the impact on decision making is discussed for the three groups of calculated ratios mentioned above. The figures and elements affecting each ratio were highlighted.

The secondary objectives of this study are to:

- consider the advantages of comprehensive human capital reporting;
- explore the concept of human capital in terms of the definition and recognition criteria of an intangible asset;
- consider current human capital disclosures of companies listed on the JSE main board;
- make recommendations regarding human capital disclosure on companies' integrated annual reports, a recommendation was made in section 5.4;
- explore financial ratio analysis as a decision making tool;
- consider the link between the human-capital-to-total-assets ratio and the change in financial ratio analysis.

These secondary objectives of the study were met.

Human capital is a resource controlled by an enterprise and meets the definition of an asset. From a financial perspective, it is a very important group of assets. Other assets have an economic useful life of only a few years whereas humans often have a working life of up to 40 years. The capitalisation of human capital has an impact on the financial performance of a company that cannot be ignored. This study complied with its objectives to indicate that recognising human capital as an asset is both feasible and desirable.

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APPENDIX 1: CALCULATION OF HUMAN CAPITAL AS AN ASSET AND LIABILITY

Pick ‘n Pay

Asset PV 2010		
Discount rate	0.1634	
Growth	0.0578	
Term	20	
Factor*		8.06
Human capital	4074898800	
Present value**	34732242064	
Asset PV 2011		
Discount rate	0.1286	
Growth	0.0578	
Term	19	
Factor*		10.00
Human capital	4292234100	
Present value**	45402218897	

* (1-((1+Discount rate)^-Term*(1+growth)^Term))/(Discount rate-Growth)

** Human capital*(1+Growth)*Factor

Liability PV 2010		
Discount rate	0.099	
Term	20	
Factor*		8.571997879
PMT**	4051825788	
Present value of asset	34732242064	
Liability PV 2011		
Discount rate	0.09	
Term	19	
Factor		8.950114779
PMT**	5072808563	
Present value of asset	45402218897	
Present value of liability***	34118908240	

* (1-((1+Discount rate)^-Term))/Discount rate

** Present value of asset/Factor

*** 2010 value+Finance charge-PMT

APPENDIX 2: CALCULATION OF ADJUSTED FINANCIAL FIGURES

Pick 'n Pay

	Original	**Adjustment**	**Adjusted**
	2011	**2011**	**2011**
	R'000	**R'000**	**R'000**
Financial figures			
Intangible assets	404 500	45 402 212	45 806 712
Other assets	10 695 800	No adjustment	10 695 800
Total assets	11 100 300	45 402 212	56 502 512
Total liabilities	8 941 500	37 412 864	46 354 364
Total equity	2 158 800	7 989 348	10 148 148
Revenue	51 945 800	No adjustment	51 945 800
Gross profit	9 086 200	No adjustment	9 086 200
EBIT	1 427 600	15 202 619	16 630 219
Interest expense	111 000	3 438 492	3 549 492
Profit before tax	1 356 100	11 724 627	13 080 727
Tax	447 800	3 293 956	3 741 756
Profit after tax	908 300	8 430 671	9 338 971

APPENDIX 3: RECOGNISING CURRENT HUMAN CAPITAL DISCLOSURES

Chemicals: African Explosives and Chemical Industries Group Limited (AECI)

Cost associated with employees	Cost identified in financial statements	Asset	2011	2010
HR Scorecard				
Acquire employees	Internal and external recruitment	No	Not disclosed	Not disclosed
	Financial incentives	Yes	Not disclosed	Not disclosed
Maintain employees	Salaries and wages	Yes	R2 275 000 000	R2 130 000 000
	Directors' remuneration	Yes	R42 048 000	R34 626 000
	Medical contribution	Yes	R87 000 000	R168 000 000
	Pension contribution	Yes	Not disclosed	Not disclosed
	Leave pay	No	Not disclosed	Not disclosed
	Retirement plans	Yes	R115 000 000	R94 000 000
	Other contributions	Yes	Not disclosed	Not disclosed
Develop employees	Restructuring costs	No	Not disclosed	Not disclosed
	Training and development costs	Yes	Not disclosed	Not disclosed
Retention cost	Termination benefits	No	Not disclosed	Not disclosed
Human capital				
Skills	Training and development costs	Yes	Not disclosed	Not disclosed
Experience	Professional development	Yes	Not disclosed	Not disclosed
Motivation	Yearly bonuses	Yes	R98 000 000	R59 000 000
	Share-based payments	Yes	Not disclosed	Not disclosed
	Performance bonuses	No	Not disclosed	Not disclosed
Total*			**R2 617 048 000**	**R2 485 626 000**

Number of permanent employees	**7 141**	**6 821**

*Total human capital recognised as an asset.

General mining: African Rainbow Minerals Limited (ARM)

Cost associated with employees	Cost identified in financial statements	Asset	2011	2010
HR Scorecard				
Acquire employees	Internal and external recruitment	No	Not disclosed	Not disclosed
	Financial incentives	Yes	Not disclosed	Not disclosed
Maintain employees	Salaries and wages	Yes	R1 629 000 000	R1 351 000 000
	Directors' remuneration	Yes	R37 682 000	R59 118 000
	Medical contribution	Yes	R119 000 000	R51 000 000
	Pension contribution	Yes	R102 000 000	R86 000 000
	Leave pay	No	R4 000 000	R5 000 000
	Retirement plans	Yes	Not disclosed	Not disclosed
	Other contributions	Yes	Not disclosed	Not disclosed
Develop employees	Restructuring costs	No	Not disclosed	Not disclosed
	Training and development costs	Yes	R5 000 000	R4 000 000
Retention cost	Termination benefits	No	Not disclosed	Not disclosed
Human capital				
Skills	Training and development costs	Yes	Not disclosed	Not disclosed
Experience	Professional development	Yes	Not disclosed	Not disclosed
Motivation	Yearly bonuses	Yes	R163 000 000	R32 000 000
	Share-based payments	Yes	R37 000 000	R47 000 000
	Performance bonuses	No	Not disclosed	Not disclosed
Total*			**R2 092 682 000**	**R1 630 118 000**

Number of permanent employees **11 496** **10 281**

*Total human capital recognised as an asset.

Platinum and precious metals: Impala Platinum Holdings Limited (Implats)

Cost associated with employees	Cost identified in financial statements	Asset	2011	2010
HR Scorecard				
Acquire employees	Internal and external recruitment	No	Not disclosed	Not disclosed
	Financial incentives	Yes	Not disclosed	Not disclosed
Maintain employees	Salaries and wages	Yes	R6 305 000 000	R5 362 000 000
	Directors' remuneration	Yes	R36 674 680	R37 323 400
	Medical contribution	Yes	Not disclosed	Not disclosed
	Pension contribution	Yes	R472 000 000	R406 000 000
	Leave pay	No	Not disclosed	Not disclosed
	Retirement plans	Yes	Not disclosed	Not disclosed
	Other contributions	Yes	R6 000 000	R5 000 000
Develop employees	Restructuring costs	No	Not disclosed	Not disclosed
	Training and development costs	Yes	Not disclosed	Not disclosed
Retention cost	Termination benefits	No	Not disclosed	Not disclosed
Human capital				
Skills	Training and development costs	Yes	Not disclosed	Not disclosed
Experience	Professional development	Yes	Not disclosed	Not disclosed
Motivation	Yearly bonuses	Yes	Not disclosed	Not disclosed
	Share-based payments	Yes	(R51 000 000)	R386 000 000
	Performance bonuses	No	Not disclosed	Not disclosed
Total*			**R6 768 674 680**	**R6 196 323 400**

Number of permanent employees **46 700** **45 600**

*Total human capital recognised as an asset.

Coal: Exxaro Resources Limited

Cost associated with employees	Cost identified in financial statements	Asset	2011	2010
HR Scorecard				
Acquire employees	Internal and external recruitment	No	Not disclosed	Not disclosed
	Financial incentives	Yes	Not disclosed	Not disclosed
Maintain employees	Salaries and wages	Yes	R3 935 000 000	R3 702 000 000
	Directors' remuneration	Yes	R43 231 006	R32 321 719
	Medical contribution	Yes	R302 000 000	R282 000 000
	Pension contribution	Yes	Included above	Included above
	Leave pay	No	Not disclosed	Not disclosed
	Retirement plans	Yes	Not disclosed	Not disclosed
	Other contributions	Yes	Not disclosed	Not disclosed
Develop employees	Restructuring costs	No	R113 000 000	R6 000 000
	Training and development costs	Yes	Not disclosed	Not disclosed
Retention cost	Termination benefits	No	R114 000 000	R6 000 000
Human capital				
Skills	Training and development costs	Yes	Not disclosed	Not disclosed
Experience	Professional development	Yes	Not disclosed	Not disclosed
Motivation	Yearly bonuses	Yes	Not disclosed	Not disclosed
	Share-based payments	Yes	R165 000 000	R145 000 000
	Performance bonuses	No	Not disclosed	Not disclosed
Total*			**R 4 507 231 006**	**R4 173 321 719**

Number of permanent employees **10 275** **10 440**

*Total human capital recognised as an asset.

Electronic and electrical equipment: Allied Electronics Corporation Limited (Altron)

Cost associated with employees	Cost identified in financial statements	Asset	2011	2010
HR Scorecard				
Acquire employees	Internal and external recruitment	No	Not disclosed	Not disclosed
	Financial incentives	Yes	Not disclosed	Not disclosed
Maintain employees	Salaries and wages	Yes	R3 473 000 000	R3 320 000 000
	Directors' remuneration	Yes	R30 000 000	R37 000 000
	Medical contribution	Yes	Other contr.	Other contr.
	Pension contribution	Yes	Other contr.	Other contr.
	Leave pay	No	Other contr.	Other contr.
	Retirement plans	Yes	Other contr.	Other contr.
	Other contributions	Yes	R215 000 000	R242 000 000
Develop employees	Restructuring costs	No	Not disclosed	Not disclosed
	Training and development costs	Yes	Not disclosed	Not disclosed
Retention cost	Termination benefits	No	Not disclosed	Not disclosed
Human capital				
Skills	Training and development costs	Yes	Not disclosed	Not disclosed
Experience	Professional development	Yes	Not disclosed	Not disclosed
Motivation	Yearly bonuses	Yes	Not disclosed	Not disclosed
	Share-based payments	Yes	R14 000 000	R18 000 000
	Performance bonuses	No	Not disclosed	Not disclosed
Total*			**R3 732 000 000**	**R3 617 000 000**

Number of permanent employees	**12 037**	**12 311**

*Total human capital recognised as an asset.

Industrial engineering: Hudaco Industries Limited

Cost associated with employees	Cost identified in financial statements	Asset	2011	2010
HR Scorecard				
Acquire employees	Internal and external recruitment	No	Not disclosed	Not disclosed
	Financial incentives	Yes	Not disclosed	Not disclosed
Maintain employees	Salaries and wages	Yes	R605 002 000	R503 832 000
	Directors remuneration	Yes	R23 698 000	R17 296 000
	Medical contribution	Yes	Not disclosed	Not disclosed
	Pension contribution	Yes	Included in S&W	Included in S&W
	Leave pay	No	Not disclosed	Not disclosed
	Retirement plans	Yes	Not disclosed	Not disclosed
	Other contributions	Yes	Not disclosed	Not disclosed
Develop employees	Restructuring costs	No	Not disclosed	Not disclosed
	Training and development costs	Yes	Not disclosed	Not disclosed
Retention cost	Termination benefits	No	Not disclosed	Not disclosed
Human capital				
Skills	Training and development costs	Yes	Not disclosed	Not disclosed
Experience	Professional development	Yes	Not disclosed	Not disclosed
Motivation	Yearly bonuses	Yes	Not disclosed	Not disclosed
	Share-based payments	Yes	R854 000 000	R814 333 000
	Performance bonuses	No	Not disclosed	Not disclosed
Total*			**R1 482 700 000**	**R1 335 461 000**

Number of permanent employees **2 505** **2 415**

*Total human capital recognised as an asset.

Beverages: Distell Group Limited

Cost associated with employees	Cost identified in financial statements	Asset	2011	2010
HR Scorecard				
Acquire employees	Internal and external recruitment	No	Not disclosed	Not disclosed
	Financial incentives	Yes	Not disclosed	Not disclosed
Maintain employees	Salaries and wages	Yes	R1 006 208 000	R941 354 000
	Directors' remuneration	Yes	R8 787 000	R9 081 000
	Medical contribution	Yes	R54 265 000	R47 362 000
	Pension contribution	Yes	R70 031 000	R62 829 000
	Leave pay	No	Not disclosed	Not disclosed
	Retirement plans	Yes	Not disclosed	Not disclosed
	Other contributions	Yes	Not disclosed	Not disclosed
Develop employees	Restructuring costs	No	Not disclosed	Not disclosed
	Training and development costs	Yes	Not disclosed	Not disclosed
Retention cost	Termination benefits	No	Not disclosed	Not disclosed
Human capital				
Skills	Training and development costs	Yes	Not disclosed	Not disclosed
Experience	Professional development	Yes	Not disclosed	Not disclosed
Motivation	Yearly bonuses	Yes	R41 060 000	R39 882 000
	Share-based payments	Yes	R8 306 000	R8 279 000
	Performance bonuses	No	Not disclosed	Not disclosed
Total*			**R1 188 657 000**	**R1 108 787 000**

	2011	2010
Number of permanent employees	**4 689**	**4 578**

*Total human capital recognised as an asset.

Pharmaceuticals and biotechnology: Adcock Ingram Holdings Limited

Cost associated with employees	Cost identified in financial statements	Asset	2011	2010
HR Scorecard				
Acquire employees	Internal and external recruitment	No	Not disclosed	Not disclosed
	Financial incentives	Yes	Not disclosed	Not disclosed
Maintain employees	Salaries and wages	Yes	R598 099 000	R596 258 000
	Directors' remuneration	Yes	R9 870 000	R14 478 000
	Medical contribution	Yes	R27 175 000	R26 789 000
	Pension contribution	Yes	Not disclosed	Not disclosed
	Leave pay	No	Not disclosed	Not disclosed
	Retirement plans	Yes	R66 111 000	R57 535 000
	Other contributions	Yes	R1 643 000	R1 784 000
Develop employees	Restructuring costs	No	Not disclosed	Not disclosed
	Training and development costs	Yes	Not disclosed	Not disclosed
Retention cost	Termination benefits	No	Not disclosed	Not disclosed
Human capital				
Skills	Training and development costs	Yes	Not disclosed	Not disclosed
Experience	Professional development	Yes	Not disclosed	Not disclosed
Motivation	Yearly bonuses	Yes	Not disclosed	Not disclosed
	Share-based payments	Yes	R17 588 000	R312 314 000
	Performance bonuses	No	R0	R7 219 000
Total*			**R720 486 000**	**R1 009 158 000**

	2011	2010
Number of permanent employees	**3 310**	**Not disclosed**

*Total human capital recognised as an asset.

Food and drug retailers: Pick n Pay Holdings Limited

Cost associated with employees	Cost identified in financial statements	Asset	2011	2010
HR Scorecard				
Acquire employees	Internal and external recruitment	No	Not disclosed	Not disclosed
	Financial incentives	Yes	Not disclosed	Not disclosed
Maintain employees	Salaries and wages	Yes	R3 704 300 000	R3 517 200 000
	Directors' remuneration	Yes	R18 234 100	R13 798 800
	Medical contribution	Yes	Not disclosed	Not disclosed
	Pension contribution	Yes	R250 100 000	R218 300 000
	Leave pay	No	R2 200 000	R14 200 000
	Retirement plans	Yes	Not disclosed	Not disclosed
	Other contributions	Yes	R12 800 000	R20 600 000
Develop employees	Restructuring costs	No	Not disclosed	Not disclosed
	Training and development costs	Yes	R233 000 000	R239 800 000
Retention cost	Termination benefits	No	Not disclosed	Not disclosed
Human capital				
Skills	Training and development costs	Yes	Not disclosed	Not disclosed
Experience	Professional development	Yes	Not disclosed	Not disclosed
Motivation	Yearly bonuses	Yes	Not disclosed	Not disclosed
	Share-based payments	Yes	R73 800 000	R65 200 000
	Performance bonuses	No	R25 400 000	R34 500 000
Total*			**R4 292 234 100**	**R4 074 898 800**

Number of permanent employees **49 200** **49 000**

*Total human capital recognised as an asset.

Software and computer services: EOH Holdings Limited

Cost associated with employees	Cost identified in financial statements	Asset	2011	2010
HR Scorecard				
Acquire employees	Internal and external recruitment	No	Not disclosed	Not disclosed
	Financial incentives	Yes	Not disclosed	Not disclosed
Maintain employees	Salaries and wages	Yes	R401 861 000	R320 305 000
	Directors' remuneration	Yes	R38 572 000	R22 463 000
	Medical contribution	Yes	Not disclosed	Not disclosed
	Pension contribution	Yes	Not disclosed	Not disclosed
	Leave pay	No	Not disclosed	Not disclosed
	Retirement plans	Yes	Not disclosed	Not disclosed
	Other contributions	Yes	Not disclosed	Not disclosed
Develop employees	Restructuring costs	No	Not disclosed	Not disclosed
	Training and development costs	Yes	Not disclosed	Not disclosed
Retention cost	Termination benefits	No	Not disclosed	Not disclosed
Human capital				
Skills	Training and development costs	Yes	Not disclosed	Not disclosed
Experience	Professional development	Yes	Not disclosed	Not disclosed
Motivation	Yearly bonuses	Yes	Not disclosed	Not disclosed
	Share-based payments	Yes	R12 698 972	R15 572 615
	Performance bonuses	No	Not disclosed	Not disclosed
Total*			**R453 131 972**	**R358 340 615**

Number of permanent employees	**3 200**	**Not disclosed**

*Total human capital recognised as an asset.